FOR RICHER FIELDS

Croplife®

PUBLISHED EVERY MONDAY

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 2 | Subscription Rates: $5 for 1 year, $9 for 2 years | MARCH 14, 1955 | Acceptance under Section 34.64, P. L. and R. authorized. | No. 11

Need for Extensive Industry Educational Job Stressed at Spring Meeting of NAC

ST. LOUIS — A renewed emphasis on the education of the public, the basic pesticide industry itself and its distributors and dealers was urged during a fresh, frank and realistic industry self-appraisal at the March 7-9 meeting of the National Agricultural Chemicals Assn., held at the Chase Hotel here.

This note was sounded by W. W. Allen, Dow Chemical Co., president of the association, who declared that "no manufacturer, on the grounds that he is small, or late to enter the field or just because he has no inclination in that direction, can excuse himself from a share in this responsibility."

Another speaker, John L. Gillis, Monsanto Chemical Co., St. Louis, put it this way: "Perhaps the first step is to assert our responsibility to do our own selling job, to do a good selling job and to get paid for doing it."

Between them, Mr. Allen and Mr. Gillis hit upon a keynote of the first day's session—that the job of telling the public about the value of the industry and its products and of shoring up responsible selling from the basic manufacturer through to the dealer is one part work and one part opportunity for sound and stable growth.

Appearing with them on the rostrum the first day to get the convention off to a fast start were Fred Heinkel, president of the Missouri Farmers Assn., Inc., Columbia, Mo., and Donald A. Wilbur, Dept. of Entomology, Kansas State College.

This lively pace was continued on the final two days, when the program centered around three panel discussions on "Better Farming with Herbicides," "Better Farming with Soil Insecticides" and a "Miller Bill Workshop."

Lea S. Hitchner, executive secretary of NAC, addressed the members the morning of March 8.

Attendance at the convention was about 300, and most were on hand to hear True D. Morse, undersecretary of agriculture, the principal speaker at the March 8 luncheon-banquet.

Mr. Allen, who was introduced by C. P. Zorsch, Monsanto Chemical Co., St. Louis, chairman of the convention Program Committee, declared that he was "proud of our past and optimistic about the future," but that he wanted to "stick to the realities of everyday business as we know it, pinpointing things that we must do to insure the growth we all know is possible."

In putting a finger on "the basic necessity for education of the pub-

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MORE NAC STORIES

Herbicide Panel

NAC convention panel sees continued growth in herbicide use—Page 20.

Soil Insecticide Panel

Group of experts forecasts bright future for soil insecticides—Page 21.

Tariff Unit Again Rules Against Curb On Potash Imports

Unanimous Decision Handed Down on France, West Germany Imports

WASHINGTON—The U.S. Tariff Commission in a unanimous opinion, has ruled that imports of muriate of potash from western Germany and France into the U.S. were not being sold at prices representing less than fair value and consequently were not in contravention of the provisions of the Anti-Dumping Act of 1921.

Following the delivery of this opinion the U.S. Treasury Dept. halted further withholding of appraisement of entries of muriate of potash from those sources and instructed the treasury customs agents to process entries of that commodity without question as to the dumping issue.

This stand by the tariff commission was of little surprise to the trade since the commission had previously cleared East German potash of similar conditions referred to it by the Treasury Dept. (See page 1 of the March 7 issue of Croplife.)

On the basis of complaints received by the Treasury Dept. it previously ordered its customs inspectors to withhold appraisment of entries of potash from East Germany, western Germany and France on the ground that the sales prices in the U.S. did

(Continued on page 17)

Localized Damage By Chinch Bugs Forecast by USDA

WASHINGTON—Chinch bugs are expected to be no more of a problem in some central states this year than they were in 1954, according to U.S. Department of Agriculture survey results released March 4. Farmer control efforts last year held damage to a minimum.

Surveys, cooperative among state and Agricultural Research Service agencies, were made last fall after the insects had taken cover for the winter.

These insects, which caused corn and sorghum damage only in localized areas last year, will probably be troublesome in much the same areas this year. Scattered, locally severe, or very severe infestations may be expected in northeastern Arkansas, east central Illinois, east central Kansas, northern Missouri, and northeastern Oklahoma. Elsewhere in those states and in Indiana and Nebraska, forecasted populations range from non-economic to threatening.

Vietnam, Pakistan Get FOA Authorizations

WASHINGTON — Foreign Operations Administration recently announced a $250,000 nitrogenous fertilizer authorization for Vietnam and a $165,000 pesticide authorization for Pakistan.

Source of the Vietnam procurement is world wide and the ending delivery date is next Aug. 31. The U.S. and possessions are listed as source for the Pakistan procurement.

New Light Is Shed On Miller Bill in Panel Discussion

ST. LOUIS—Advice to the pesticide industry regarding its submitting petitions for residue tolerances on crops, was offered at the March 9 meeting of the National Agricultural Chemicals Assn. here. This session, marking the end of the 1955 spring meeting, comprised a panel of experts representing the industry and government. Lea S. Hitchner, NAC Assn. executive secretary, acted as moderator of the panel.

Comprising four members in addition to Mr. Hitchner, the panel answered numerous questions from the floor and presented further information on the Miller Amendment. Panel members were: Joseph A. Noone, NAC Assn. technical adviser; W. B. Rankin, assistant to the Commissioner of the Food & Drug Administration; Dr. W. G. Reed, Head of the Pesticide Regulation Section of the Department of Agriculture, and John D. Conner, Washington, D.C., NAC Assn. Counsel.

In leading off the discussion, Mr. Rankin said that the FDA is expecting to receive a great number of petitions for tolerances before the deadline of July 22, 1955. Additional personnel will be assigned to handle this expected influx of work, he said, and although the job is expected to be a "monumental task," it will be taken care of as fast as possible.

"We will make every effort to review petitions promptly and reply to all questions without delay," he

(Continued on page 4)

Opportunities for Expanded Business Stressed at Missouri Aerial Applicators Meeting

COLUMBIA, MO. — A complete rundown on agricultural chemical recommendations for 1955 was given Missouri aerial applicators at the Second Annual Aerial Applicators Short Course held at the University of Missouri on March 1-2.

More than 100 applicators, chemical firm representatives, equipment dealers, and other visitors attended the event, sponsored by the university's College of Agriculture.

Perhaps the most forceful speaker to appear on the program was John F. Neace, manager, Marsh Aviation Co., Phoenix, Ariz., who talked to the applicators at the morning session March 1. His subject was "What's Wrong With Agricultural Aviation and What Are You Doing About It?"

"Agricultural aviation is now a big business," Mr. Neace told those in attendance, "and as aerial applicators, we have to recognize what is wrong with our methods and practices."

Included in the advice he gave the applicators in his talk was that they should quit cutting each other's throats for existing business and go out and get new business—plenty being available, he pointed out. Also, he advised the applicators to organize

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Northern California Chemical Firms Spend $11 Million for Expansion

SAN FRANCISCO — Chemical manufacturing concerns in Northern California invested almost $11 million during 1954 in new plants or improvements and expansions in existing plants.

This was the estimate made last week by the industrial department of the San Francisco Chamber of Commerce. The figure represented 14 "new firms" which spent a total of $2,380,000 and 25 additions or improvements by existing firms, representing an expenditure of $8,496,000, or a grand total of $10,876,000.

The amount invested exclusively for the manufacture of agricultural chemicals was not revealed, but at least eight firms were named as being interested principally in the production of such chemicals.

The eight firms stressing their service to agriculture include Brulin and Company, Inc., of Oakland; California Spray Chemical Corp., of San Jose; Klix Chemical Co., Inc., of South San Francisco; Magic Seal Industries of Oakland; the Moyer Chemical Co. of San Jose; the Pacific Chemical and Fertilizer Co. of Alameda; the Reade Manufacturing Co., Inc., of Stockton; and Yates and Smart Paint Co., Inc., of Oakland.

CHEMICAL EMPLOYMENT

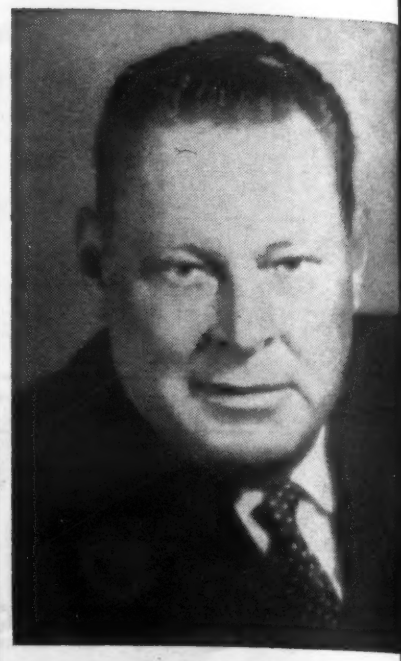
SAN FRANCISCO — The number of wage and salary workers employed in the manufacture of agricultural and other types of chemicals in California fell between 1953 and 1954 by an average of 1,100. From a total of 35,800 employed each month during the earlier year, the average number of workers amounted to 34,700 each month of the year recently ended, according to reports of the Division of Labor Statistics and Research of the California State Department of Industrial Relations.

California Produces Record Farm Crop

SAN FRANCISCO — California farmers produced a record farm crop during 1954, according to George A. Scott, chief of the Crop and Livestock Reporting Service. Reporting to the State Board of Agriculture, Mr. Scott said that farmers produced a yield of 27,300,000 tons of all principal crops during the year, and that this was 4% greater than the previous year, a record up to that time.

The state continued to lead the nation in the combined value of all crops produced. Total value during the record production year was estimated at $1,623,010,000, according to Mr. Scott.

The reporting service chief said that field crops accounted for nearly 60% of the grand total, a 10% increase over 1953. Fruit and nut production was down by an estimated 11% from the previous year.



G. H. Weldon

G. H. Weldon to Head Insecticide Sales in West for Velsicol

CHICAGO — The appointment of G. H. Weldon as manager of insecticide sales, Western Division, has been announced by J. F. Kirk, vice president and director of sales for Velsicol Corp. Mr. Weldon will make his headquarters at the Velsicol office in Berkeley, Cal.

Mr. Weldon joined Velsicol in 194 as a regional sales representative in the West. He holds degrees in entomology from Oregon State College and Michigan State College. In his new position, he will be responsible for coordinating Velsicol's sales activities pertaining to insecticides in the nine western states.

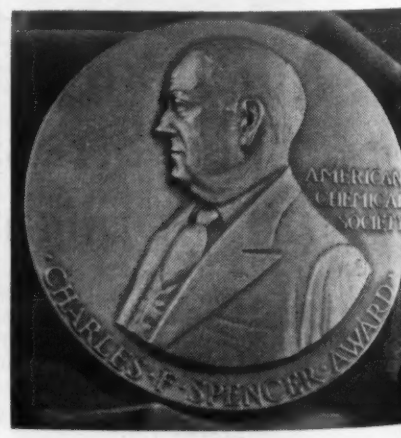
White-Fringed Beetle Control Plan Mapped

TRENTON, N.J. — Control measures aimed at eradicating the white-fringed beetle, which was discovered in the Vineland area last November, are to be inaugurated, according to a report by Frank A. Soraci, entomology chief of the New Jersey Department of Agriculture.

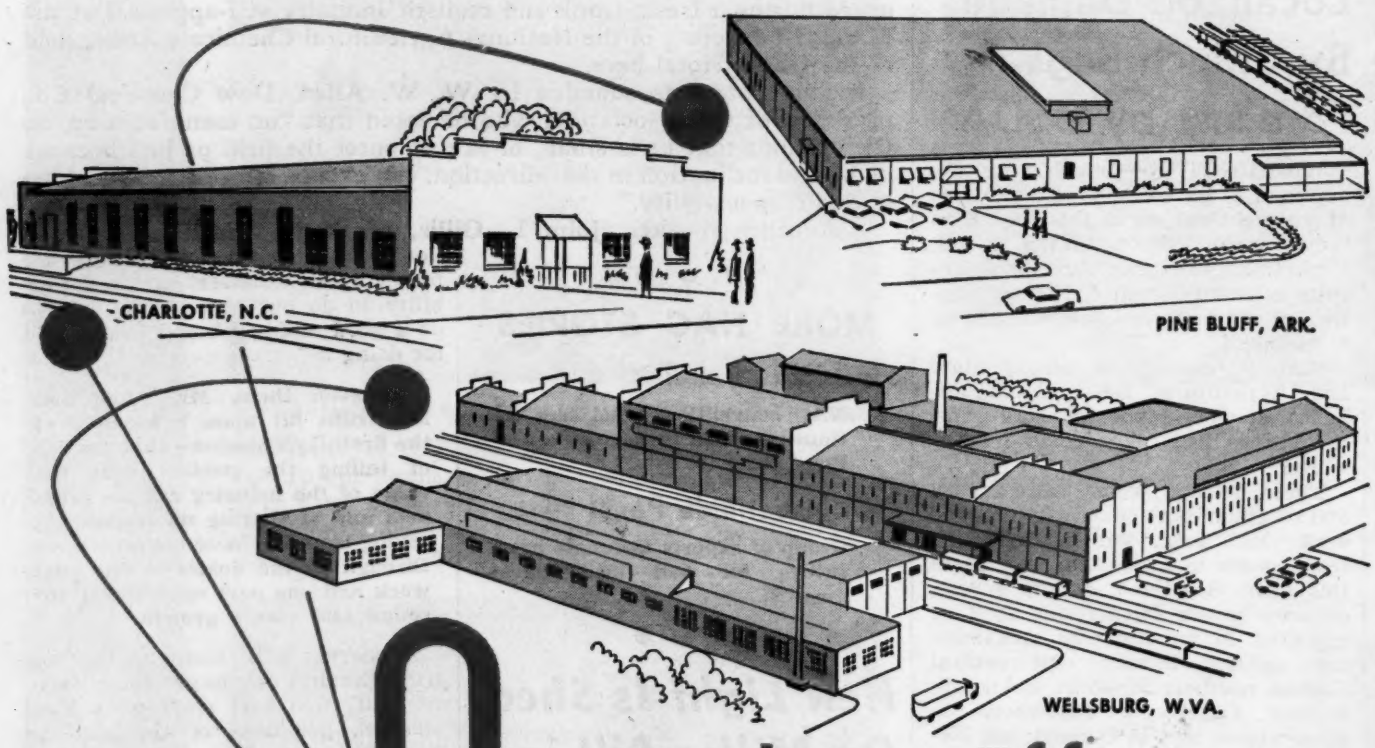
The area will be treated with a soil insecticide under a joint federal-state program. The infestation is contained in about 45 acres, but 350 acres will be treated.

Anhydrous Plant

ROCKPORT, MO. — Archie Carpenter, Jr., manager of the Atchison County Cooperative Assn., has announced that an anhydrous ammonia distribution plant will be erected near here.



SPENCER MEDAL—A new award of the American Chemical Society will honor Charles F. Spencer, Kansas industrialist who died in 194 Charles F. Spencer was the father of Kenneth Spencer, president of the Spencer Chemical Co., Kansas City. The award, which includes an honorarium of $500, will be made annually for work done in education, research or industry in behalf of agriculture or food chemistry. The first award will be made this fall.



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For Multi-Wall bags, "make it a habit to depend on Hammond"

SC Earnings, et Sales Show ncreases in 1954

NEW YORK — Net earnings of ommercial Solvents Corp. for 1954 ere $2,668,342, equal to $1.01 per are of common stock, according to report from A. R. Bergen, secre- ry. Net sales were $51,608,349 d dividends of $2,636,878, or $1 per are, were paid on common stock ring 1954. Both net earnings and t sales showed increases over those r 1953.

The proportion of sales and earn- gs from petrochemical products ontinued to increase throughout he year, reflecting full production rom expanded nitrogen and me- hanol production facilities. CSC dded aqua ammonia to its line of itrogen bearing plant foods dur- ng the year.

Industrial chemicals unit sales vol- ne advanced in all major areas. les of nitroparaffins continued isk throughout the year with em- asis on market development for e major expansion of NP produc- n facilities scheduled to be com- eted this year.

A dividend of 25¢ per share was eclared March 1 on the outstanding mmon stock of the corporation, yable on March 31, 1955, to stock- lders of record at the close of siness on March 9, 1955. Previous yment was 25¢ per share on Dec. , 1954.

Commercial Solvents Corp. and Subsidiary

	Year ended Dec. 31 1954	1953
t earnings	$2,668,342	$2,656,394
rnings per common share	1.01	1.01
vidends paid	2,636,878	2,636,878
t sales	51,608,349	51,310,204
ovision for federal axes on income	2,314,500	2,325,500

artin F. Wilkerson o Head Diamond ouston Sales Office

CLEVELAND — Appointment of artin F. Wilkerson as manager of e Houston, Texas branch sales ice of Diamond Alkali Co. was an- unced here March 2 by W. H. Mc- nnell, vice president, sales.

Mr. Wilkerson succeeds John W. ennady, who recently was made neral manager of the Diamond ack Leaf Co., Richmond, Va. The m was organized jointly by Dia- ond Alkali Co. and Virginia-Carolina emical Corp. to take over the man- acture and merchandising of the ack Leaf brand of agricultural emicals and pest control products. ee page 1 of the Feb. 28 Croplife.)

Mr. Wilkerson comes to his new st from Memphis, Tenn., where he s been a member of Diamond's les staff since June, 1948. A native Tennessee, he graduated from the niversity of Tennessee, Knoxville, th a B.S. degree in business ad- inistration majoring in industrial gineering. A World War II vet- an, he saw service in the European eater with the U.S. Army Corps Engineers.

ough Appoints ervice Representatives

LIBERTYVILLE, ILL.—The Frank Hough Co. here, manufacturer of ayloader tractor-shovels and trac- rs, has appointed resident factory rvice representatives in five cities establish closer contact with the rvice departments of its distribu- rs in surrounding territories.

These men will keep Hough Dis- butors fully informed of the latest rvice developments on the Pay- der line, conduct service meetings th distributors' service depart- nts and preventive maintenance etings for customers' personnel.

Atlas Powder to Continue Scholarships

WILMINGTON — Atlas Powder Co. will award eight $1,000 college scholarships again this year, Ralph K. Gottshall, president, has announced. The grants will go to students who will be seniors during the 1955-56 college year, majoring in chemistry or any branch of engineering.

Last year, the first year that the scholarships were offered, over 160 applicants were screened before the eight winners were selected.

The program, in which 38 colleges and universities have been invited to participate this year will be administered by the Atlas committee on scholarships, headed by Dr. Thomas Kennedy, the company's director of industrial and public relations.

The grants will be used to pay tuition, board, travel and other senior year costs, as approved by the student's college. Winners of the awards will be announced May 15.

Successful candidates also will have a chance to gain practical experience by summer work between their junior and senior years, either in one of Atlas' 12 plants and three research laboratories or with an Atlas technical field representative.

Pay for summer work will be in addition to the $1,000 scholarship.

Missouri Tonnage

COLUMBIA, MO. — Missouri fertilizer shipments in 1954 totaled 771,375 tons, according to a report from the Agricultural Experiment Station, University of Missouri, Columbia.

This is an increase from the 1953 total of 763,276 tons. The 1954 total included 517,244 tons of mixed fertilizer with an average composition of 7.30-14.42-10.80. The average composition of 458,042 tons of mixed fertilizer in 1953 was 6.40-14.88-10.16.

Net Farm Income Shows Decline of 10% in 1954

WASHINGTON—Farm net income in 1954 is estimated at $12 billion by the U.S. Department of Agriculture, a drop of 10% from 1953.

This decline reflected lower prices received by farmers, plus only a small reduction in farm expenses.

This report fails to consider inventory position comparatively. The official USDA statement says that if inventory changes were included the next income decline would have been only slightly over 1%. Much of 1953 farm income represented inventory liquidation of corn and hogs, whereas in 1954 farmers started re-building inventory.

On the production cost side USDA reports that while those factors generally remained high there were small declines in fertilizer bills.

CASH IN ON THE BIG DEMAND FOR THIS AMAZING NEW FLY BAIT!

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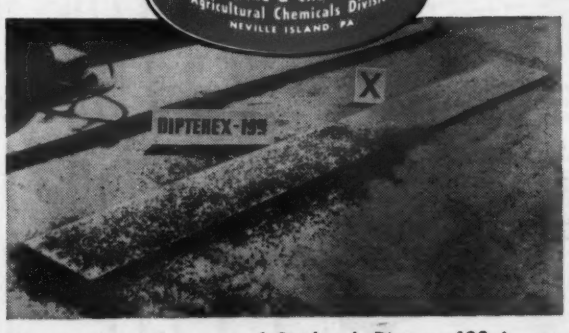
ONE POUND IS ENOUGH TO KILL 2 MILLION FLIES!



The amazing kill power of *Pittsburgh* Dipterex-199 is confirmed by this test comparison with a leading fly chemical.

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"98% kill in calf barn" . . . "Flies accumulated in piles up to one-half inch deep in 48 hours" . . . "Results were amazing!"

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Chemical Enterprises Names Regional, Development Managers

NEW YORK — Chemical Enterprises, Inc., distributor of anhydrous ammonia and agricultural chemicals, has announced the appointment of Virgil Rule as regional manager of the company's operations in the Pacific Northwest, and L. Wayne Cochran as development manager.

Mr. Rule has been active in the agricultural chemicals industry since 1947 and was formerly president and manager of the Greenville (Miss.) Liquid Fertilizer Co. He was one of the organizers of the Anhydrous Ammonia Institute, served as its president in 1952, and is a member of the board of directors.

Mr. Cochran, prior to joining Chemical Enterprises, was a research associate at Scudder, Stevens and Clark, investment counsel, where he specialized in the field of agricultural chemicals. He was previously an agricultural economist in the Production and Marketing Administration of the U.S. Department of Agriculture and was with the Giannini Foundation.

Mr. Rule will be in charge of operations in Washington, Oregon and Idaho, with headquarters at Walla Walla, Wash. Mr. Cochran will be responsible for Chemical Enterprises' program of providing new products and methods of handling agricultural materials and equipment.

SOIL PAYMENTS

WASHINGTON — The House of Representatives has voted to remove curbs on eligibility of farmers to receive soil conservation payments when they fail to comply with government acreage allotments on basic farm crops. This legislation, which has the support of the U.S. Department of Agriculture, awaits Senate action.

MILLER BILL PANEL

(Continued from page 1)

promised, and concluded his introductory remarks with the observation that "I believe all of us will continue to be in business after July 22."

Dr. Reed urged the pesticide manufacturing industry to submit as much data as possible in connection with petitions for the setting of tolerances. He reported that the pesticide regulatory body in Washington has studied the new law thoroughly and is prepared to apply this knowledge to the best advantage. He said that a workable rule has been evolved and added that the group has attempted to avoid setting up any requirements that are not entirely necessary. He said that a considerable number of basic chemicals are already registered, but many more have yet to be submitted.

Mr. Noone emphasized that the new legislation will practically eliminate any possible danger of food being contaminated from improper use of pesticides. He said that the Miller Amendment, which has had the active support of pesticide manufacturers, will prevent all possible hazards to consumers.

The NAC spokesman stressed that pesticide manufacturers, through their trade association, had worked closely with government officials and congressional leaders to develop this law to give a maximum of protection to consumers. He added that this, in effect, merely formalized a consideration for public health which the pesticide industry was already observing.

"This new milestone in consumer protection requires compliance by farmers using pesticides on farm products shipped in interstate commerce, as well as by pesticide manufacturers," Mr. Noone explained. He added that the law is primarily administered by the U.S. Food & Drug Administration, with certain responsibilities laid to the U.S. Department of Agriculture.

After tolerances have been set on various crops and pesticides, must responsibility be assumed by the insecticide trade in the event that trouble arises over the presence of residues which may exceed the limits? This question and others of similar nature, were discussed by Mr. Conner. He indicated that cases may come up in the future where too much residue is found on a crop but the lines of responsibility are not yet clearly drawn. Involved, of course, will be the land grant colleges which make recommendations, the grower who applies the pesticide; and the manufacturer.

The extent of a manufacturer's liability to the grower is not yet well defined, since this type of situation has not been litigated in the courts to any substantial degree, he said.

To be on the safe side, however, Mr. Conner advised industry people to review current labels and literature and tabulate all the crops on which these materials are to be used. It would then be advisable to determine for which of these crops a tolerance has been or will be established by the time the residue amendment becomes effective. With this information at hand, the manufacturer or formulator should then appraise recommended spray schedules to determine whether they could result in an excessive residue.

Should this procedure indicate that an illegal residue might result from use of the product under present instructions, labeling and literature should be revised immediately to conform to the tolerance. If these changes take on important proportions, Mr. Conner recommended to the manufacturer that he alert all salesmen and distributors and ask that they, in turn, bring this to the attention of the users.

Following the presentations of the formal remarks of panel members an off-the-record question and answer program brought out further details on some of the problems involved.

Nitrogen Solutions Group Meets in Omaha

OMAHA—The first annual convention of the National Nitrogen Solutions Assn. is being held at the Paxton Hotel here March 14-15.

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1955 Alfalfa Weevil Campaign

Sells your Customers through farm paper advertising like this

KILL alfalfa weevils
with
PROVEN
HEPTACHLOR
Only 4 oz. Per Acre
For Effective Control!
Rancher Ben Kohrs, Douglas, Wyoming, says:
"Before I used Heptachlor, alfalfa weevils were causing such extensive losses in my alfalfa that we were thinking of grazing other crops for forage. With Heptachlor we can continue to grow alfalfa profitably."
This spring, before weevils lay their eggs, treat your alfalfa with Heptachlor. Such early-season application will protect beneficial insects, while it insures maximum control of harmful weevils.
ASK YOUR DEALER FOR HEPTACHLOR—THE MOST W DELY USED INSECTICIDE BY ALFALFA GROWERS!
FREE! Valuable booklet tells how to control alfalfa weevils with Heptachlor. Use coupon below to get your copy.
Please send me my FREE copy of "How to Control Alfalfa Weevils with Heptachlor."
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REPRESENTATIVES IN PRINCIPAL CITIES

MISSOURI AERIAL SPRAYERS

(Continued from page 1)

into a solid group so that they would be recognized as such and not as separate individuals.

Among the facts Mr. Neace cited to prove that aerial application is no longer a small business was that the 5,000 agricultural aircraft in the U.S. flew 772,000 hours in 1954 and that this total represented 32% of the time that all scheduled airlines flew during the same period.

To those who think aerial application is a dangerous business, Mr. Neace pointed out that only one aerial applicator was killed for every 15,000 flying hours. While this figure needs improving, he said it wasn't too bad as records go. He also noted that one out of every 12 acres in this country was treated by aircraft last year.

The afternoon program the first day was devoted to the 1955 chemical recommendations. Faculty and extension personnel of the College of Agriculture presented this section of the program.

They were O. Hale Fletchall, university field crops department; J. Ross Fleetwood and William J. Murphy, extension field crops specialists; John Falloon, extension soils specialist; Stirling Kyd and Harry E. Brown, extension and faculty entomologists respectively; and Dayton L. Klingman, agronomist, Field Crops Research Branch, U.S. Department of Agriculture, stationed at Columbia.

Mr. Fletchall said that the greatest need for aerial weed control in cultivated crops arose from poor weather conditions when farmers could not get into their fields. Also, spraying in small grains is practical except when damage to legumes seeded in the small grains outweighs the weed control benefits, he said.

Mr. Fleetwood spoke on brush and weed control in pastures. In general, Mr. Fleetwood recommended the use of 2,4-D and 2,4,5-T for the control of brush and 2,4-D for weed control.

The greatest use of defoliation is made in the cotton regions of Missouri, Mr. Murphy told those in attendance. Defoliants will be used more regularly as mechanical cotton picking increases and as a corresponding need for an early harvest arises, he said.

Desiccants, or pre-harvest sprays, will be most often used on soybeans, according to Mr. Murphy. And, this is mostly a matter of weed control, drying up weeds and grass that would delay harvesting.

Mr. Falloon's portion of the program was devoted to the aerial application of fertilizers. He said that nitrogen fertilizers were best adapted to aerial application. And its use should be limited to soils either naturally high in phosphate and potash or where these nutrients have been applied in other fertilizers, he said.

Mr. Kyd's talk referred the applicators to general insect control recommendations for 1955. He gave the applicators the College of Agriculture's recommendations for the control of major Missouri insect pests. Also, Mr. Kyd noted that aerial applicators can look to the field of soil insecticides for use on corn land as a means of increasing business.

"These insecticides have caught on faster with farmers than nearly anything I've seen since DDT," Mr. Kyd said. "Corn will not be the only crop to benefit from them. Reports are that some parts of the wheat belt are beginning to use soil insecticides with good results."

Mr. Brown and Mr. Klingman conducted a session on weed and insect identification.

Two of the speakers appearing on the program the final day were Neal E. Shafer, University of Nebraska Agronomy Dept., Lincoln, Neb., and Dr. Frank Princi, Kettering Laboratory, University of Cincinnati.

"Since new insecticides are always subject to suspicion, some doubt and confusion still exist concerning the safe use of these substances," Dr. Princi said in talking to the group on the safe handling of insecticides.

"Regardless of the actual or inherent danger of any material, doubt and confusion will continue as long as there is a lack of understanding of the methods of use and ignorance of the potentials of the substance."

He said that continuous studies of workers who manufacture, formulate, and use the materials have shown that safe handling is possible and that continuous exposure need not necessarily result in harmful effects when proper precautions are observed.

Mr. Shafer gave a report on experiments in the use of aircraft in agriculture as conducted in his home state.

"The airplane has certain distinct advantages of speed, timeliness and accessibility which make it especially suited for certain agricultural jobs," he noted. "It is especially suited for the application of agricultural chemicals on growing crops where large acreages must be treated in a short time."

Some of the possibilities cited by Mr. Shafer regarding the use of aircraft were weed control in small grain and in corn after tasseling; application of fungicides to control wheat stem rust; insecticide application to control corn root worm, corn borer, grasshoppers, and legume crop insects; and the application of a large number of insecticides and fungicides to control disease and insect damage in fruit orchards.

He also noted that aircraft can be used effectively in the herbicidial control of brush on pasture and rangeland and for clearing bottom land.

Other uses listed by Mr. Shafer included the application of fertilizers—both granular and liquid; application of chemical defoliants to aid in drying seed crops and for summer fallow; and the aerial seeding of legumes and other forage plants.

Rounding out the program as speakers were Alfred J. Hoffman, legal counsel for the Missouri Farmers Assn., Columbia, Mo.; Russell E. Larson, USDA agricultural engineer, Washington, D.C.; and Arthur Gieser, of the Aircraft and Special Equipment Center, USDA Plant Pest Control Branch, Washington, D.C.

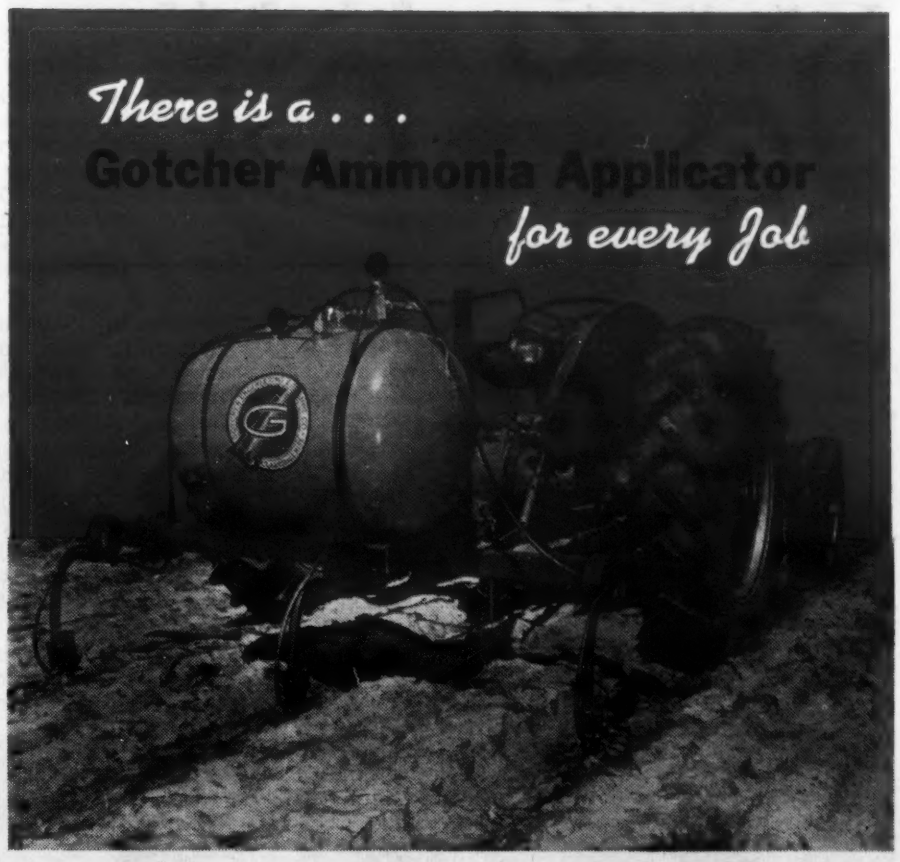
Mr. Hoffman advised the aerial applicators on the legal aspects of aerial application and Mr. Larson reported on the agricultural aviation research conference.

Mr. Gieser reported on the progress in the development of new pest control equipment when the short course moved to the Columbia Municipal Airport for the final afternoon of the program. A display of new equipment was on hand at the airport.

Insect Meetings Scheduled in Idaho

MOSCOW, IDAHO — A series of meetings to plan for control of insects in southern Idaho is being held in that state, according to Roland Portman, University of Idaho. Sessions were held last week in Weiser, Caldwell and Boise.

The rest of the schedule includes: Shoshone, March 14, for Lincoln, Gooding, Jerome, Blaine and Butte counties; Twin Falls, March 15, for Twin Falls and Jerome; Burley, March 16, for Cassia and Minidoka; Pocatello, March 18, for Bannock; Blackfoot, March 24, for Bingham and Bonneville; and Rigby, March 29, for Jefferson, Fremont, Teton, Madison, Butte and Clark.



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The Gotcher Model GUC fills the need for an inexpensive but sturdily built anhydrous ammonia applicator for the nation's smaller farms. Now with this low cost, top quality unit, any farmer can apply ammonia to his crops with his own applicator. Increased yields from one season's use alone can more than pay for its small cost. The Model GUC will do an excellent job in row crops, or as a broadcast applicator. The 3-point hitch attachment means quick, simple mounting and dismounting. Though designed for maximum economy, it's built to the rigid requirements of Gotcher quality.

Hi Clearance Model Ideal For Side Dressing Row Crops

The 26-inch clearance of this special Gotcher model makes it higher than the tractor axle even in operating position. This permits later side dressing to all row crops without plant damage. This unit has all the rugged characteristics of the popular Gotcher Standard Pull-Type Applicator. Completely equipped as shown here, it sells for only $568.

Exclusive Gotcher Sealing Wing Eliminates Packer Wheels

This scientifically designed Sealing Wing is an exclusive Gotcher feature that guarantees against loss of ammonia under any soil conditions. It can be added to the applicator knives on any Gotcher model as optional equipment, and eliminates the need for packer wheel attachments.

Dealerships Available on Gotcher Ammonia Equipment

The Gotcher Line is a complete line that means more sales, and more dealer profits. Write for our 1955 Catalog that describes all Gotcher Pull-Type, Tractor-Mounted, and Semi-Mounted Ammonia Applicators.

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GOOD EQUIPMENT DOESN'T COST. . . *It Pays!*

Two New Men Join Wilson & George Meyer Agricultural Staff

SAN FRANCISCO—Two additions to the agricultural staff of Wilson & Geo. Meyer & Co., Pacific Coast distributors of agricultural and industrial chemicals, were announced recently by Ralph S. Waltz, vice president and manager of the firm's agricultural sales department.

They are Randolph Keim of Dixon and Archer L. Wombacher of Oakland. Both men will work out of the company's San Francisco office.

Mr. Keim, a graduate of the University of California in plant pathology, entomology and soil analysis, spent seven years in the fertilizer manufacturing industry prior to joining the Meyer firm.

Mr. Wombacher also is a University of California graduate in science who has recently been field technical advisor and supervisor of veterinary advertising for Cutter Laboratories.

Du Pont Stock Earns $7.33 a Share in 1954

WILMINGTON—Directors of E. I. du Pont de Nemours & Co. have declared a dividend of $1.25 per share on the common stock as the first quarterly interim dividend for 1955, payable March 14, 1955, to stockholders of record on March 1, 1955. For the same period of 1954, a dividend of $1 was paid.

Earnings per share of common stock for 1954 were $7.33 of which $5.30 was derived from the company's operating activities and $2.03 from General Motors Corp. dividends.

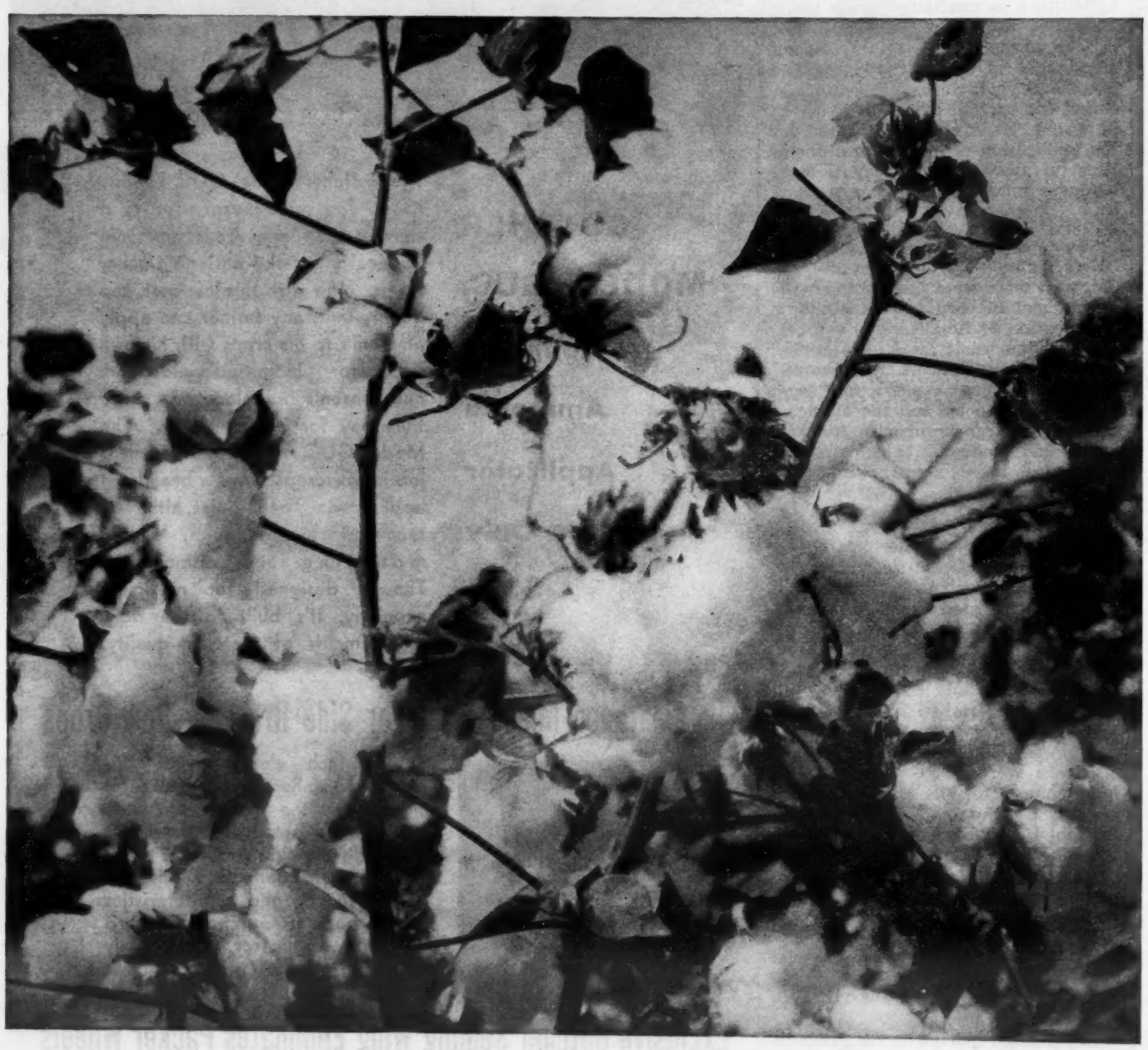
Earnings for 1953 were $4.94 per share ($3.31 from operating activities and $1.63 from General Motors). The increase in earnings from operating activities for 1954 over 1953 may be attributed largely to the expiration of the excess profits tax law on December 31, 1953.

The regular quarterly dividends of $1.12½ per share on the preferred stock—$4.50 series—and 87½¢ per share on the preferred stock—$3.50 series—also were declared, both payable April 25, 1955, to stockholders of record April 7, 1955.

University of California Gets Virus Study Grant

BERKELEY, CAL.—The National Science Foundation has given a $10,000 grant to the Department of Plant Pathology at the University of California in Berkeley. The grant will finance research aimed at classifying the many viruses that attack agricultural crops in California.

Thomas E. Rawlins, professor of plant pathology, will be in charge of the project, working with J. W. Oswald, associate professor of plant pathology, and with Herbert A. Gold, who is a lecturer in plant pathology. Also cooperating in the project will be H. H. McKinnery, plant pathologist at the U.S. Department of Agriculture Experiment Station in Beltsville, Md.



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. . . or cotton, as it is known to most of us, is one of the oldest and most beneficial crops known to man. Today with the scientific application of modern commercial fertilizers, cotton yield per acre is greater than ever before.

Potash, an important component of these fertilizers, enriches the soil, improves crop quality, builds resistance to disease and increases product yield. United States Potash Company high-grade muriate of potash has the highest K_2O content, and is free-flowing and non-caking —important advantages in the production of fertilizers that make today's cotton the finest ever grown.

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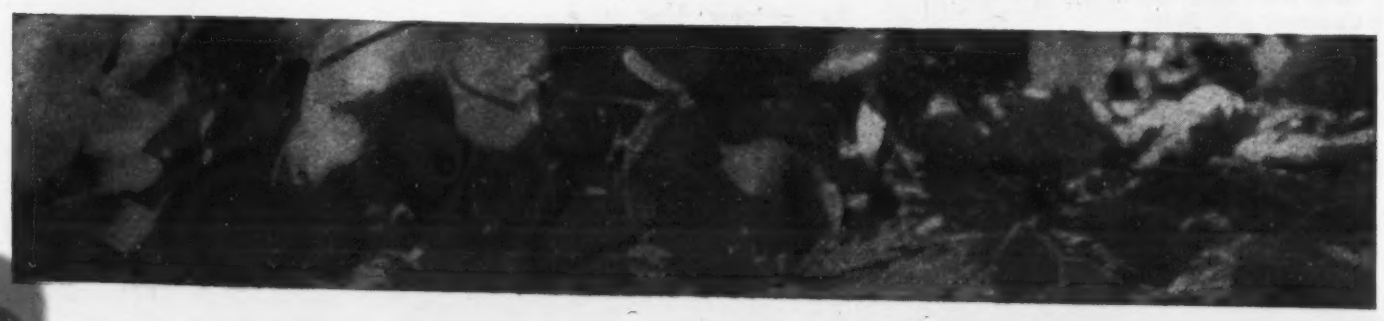


Michigan Chemical Net Sales Show Gain in 1954

ST. LOUIS, MICH. — Michi Chemical Corp. has reported th although an adverse combination market conditions in 1954 sever affected its sales and operating come, there was no reduction in sa and no change in income in compa son with 1953.

The company, however, contin to have a net loss which after carry-back amounted to $0.43 a sh against $0.26 loss a share in 1953 the outstanding 537,077 shares, cording to the annual report, issu March 2.

Net sales were $5,829,342 in 19 as compared to $5,711,396 in 19 Gross loss for 1954 before tax car back was $288,894 against $288, for 1953.

Depreciation was taken during 19 to an amount of $0.67 a share, $367,000, as compared to $350,000 1953. There was $523,000 added property, plant and wells; the pre ous year's figure was $370,000.

In his statement to stockholder Theodore Marvin, president, sai "it is believed that the downwa trend in sales and earnings of th company has ended. Improvemen in operating procedures and in pr ducts strengthen that prediction."

He also said that currently a m favorable turn in sales and earni is under way and that new process just being placed in operation, pro ise to add to the company's inco during 1955.

Research continued at a rate co parable to the chemical industry erage, and a strengthened mana ment staff and progress in cost duction should affect beneficially 1955 financial position of the co pany, according to Mr. Marvin.

"A number of additional app cations of the company's brine su ply are being readied which shou soon reach final project stag DDT manufacturing processes ha been improved and the compa is in good position to participa more actively in the insecticid market," Mr. Marvin said.

Other principal products of company going into the industr pharmaceutical, and agricultural dustries are now in steady product and indications point to better c sumption throughout the year, added.

Michigan Pest Control Meeting Plans Readied

EAST LANSING, MICH. — T manufacturers of insecticides, sa tary officers and pest control op ators will discuss a wide range of s jects at the 10th annual Michig Pest Control Operators Confere at Michigan State College, Ma 15-17.

The discussions and lectures w range from "Insect Pests of L Cabins" to "Brush and Heavy Sh Killers." Among the other sessio will be such as "Why Are PCO sociations Needed" and "Contra and Insurance for the PCO."

One of the featured participa will be Harlem Ives, Detroit, pr dent of the National Pest Con Assn.

Among the speakers for the s sions of broad community int est will be Leonard J. Czarniecki, troit Department of Health, who discuss "Is a Community Rat-Con Program a Good Community Inv ment?"

In addition to the lectures panel sessions, the conference will clude annual meetings of the Mi gan Pest Control Operators Assn. the Wolverine Pest Control Op tors Assn.

Aerial Application Progress Outlined at Purdue Conference

LAFAYETTE, IND. — Along with many words of optimism about the future of aerial equipment in agriculture, a hundred persons also heard some words of warning during the Indiana-Ohio Agricultural Aviation Conference at Purdue University Feb. 23-25.

"Farmers can become your good customers because they are already favorable toward the use of airplanes in agriculture," said John Sawyer of Dralton Farms at London, Ohio. "But there have been farmers who have been oversold and disappointed. Just don't destroy confidence by doing a bad job or by selling the idea of an uneconomical job."

More warnings came from Harold E. Hansen, Farwest General Agency, Seattle, Wash. He said that one of the big problems for agricultural aviation was to try to avoid being legislated out of business.

In 1949 there were 33 states that had no regulations on the use of aerial equipment. By 1953 that number had dropped to nine, Mr. Hansen said, adding that Texas has 17 pages of law, rules and regulations governing applicators and dispensers.

Regulations come in a variety of forms, but Mr. Hansen pointed out that the common categories are: license to operate which may mean fees for plane, operator, area covered, or all of them; professional requirements; controls in the chemical field regarding use of toxic materials; complete records of work done, which can protect the operator also; financial responsibility; and limitations for filing of damage claims.

Defending some of these regulations was R. H. McIntyre of the Indiana Aeronautics Commission. The Hoosier state requires registration of applicators and a job report on work done. This has helped the commission understand the scope of activity and has produced interesting figures.

"We also believe, Mr. McIntyre said, "that it has blocked more restrictive or adverse legislation or regulation that may have been proposed by some other agency. It appears this regulation is serving a purpose and accomplishing more than was originally expected of it."

Total annual acreage treated by aircraft in Indiana has increased from 16,886 acres in 1950 to 174,913 acres in 1954, his figures show. Of the 1954 acreage, 11,907 was for fertilizing; 29,324 for seeding; 124,617 for insect control; 5,957 for brush and weed control; 1,236 for disease control; 1,872 for defoliation.

Figures for Indiana show, he explained, that in 1954 one and a half million dollars' worth of grass was saved by using controls against army worm, a similar saving from insect control in wheat and other small grains, and two million dollars in corn. These savings were, of course, made by a combination of ground and aerial equipment.

From Ohio came word that total insect damage last year in the state was more than 50 million dollars. This was brought by C. R. Neiswander, head of Ohio State's department of entomology.

Three areas of Indiana have been attacked by Japanese beetle, according to Paul T. Ulman, assistant state entomologist, and use of aircraft appears to be successful in control. Grubs of this insect destroy crop roots, and the adults feed on some 300 host plants.

Pine sawfly has been increasing in many pine plantings, and applying virus disease by air has proved effective in control. D. L. Schuder of Purdue University's entomology department explained that research has shown the sawflies began to die 14 days after the virus had been spread. By the 23rd day, mortality was 89% and defoliation of trees had been prevented.

Because the innoculum is scarce, Mr. Schuder suggested the recipe he used for control. From pine plants with diseased larvae, he explained, collect 1000 black-diseased sawfly larvae and macerate them in a quart of water. Set the can on a shelf long enough for larvae to rot, refilling the can as water evaporates. To use this, strain off the sawfly fragments, and put one c.c. of the virus suspension in one gallon of water per acre. It is specific for sawflies and will not infect animals or man, he said.

Tips came from other specialists on the agricultural aviation conference program. R. T. Everly, Purdue entomologist, talked about the advantages of using aerial equipment to increase forage and seed crops from legumes at less cost and with less crop damage. Robert G. Ueding, Vincennes, Ind., flier, told bout defoliating soybeans to speed up field drying, destroy weeds, improve crop quality and increase yields.

Thayer Martin, Na-Churs Plant Food Co., Marion, Ohio, said that time of day is important in applying liquid fertilizer. Better results come at 9 or 9:30 a.m. and after 4 p.m. H. H. Dodge, Shell Chemical Corp., St. Louis, discussed advantages of granular insecticides and fertilizers. He said there was less drift during application; they fell through foliage to reach the soil, and applicators could carry a bigger payload.

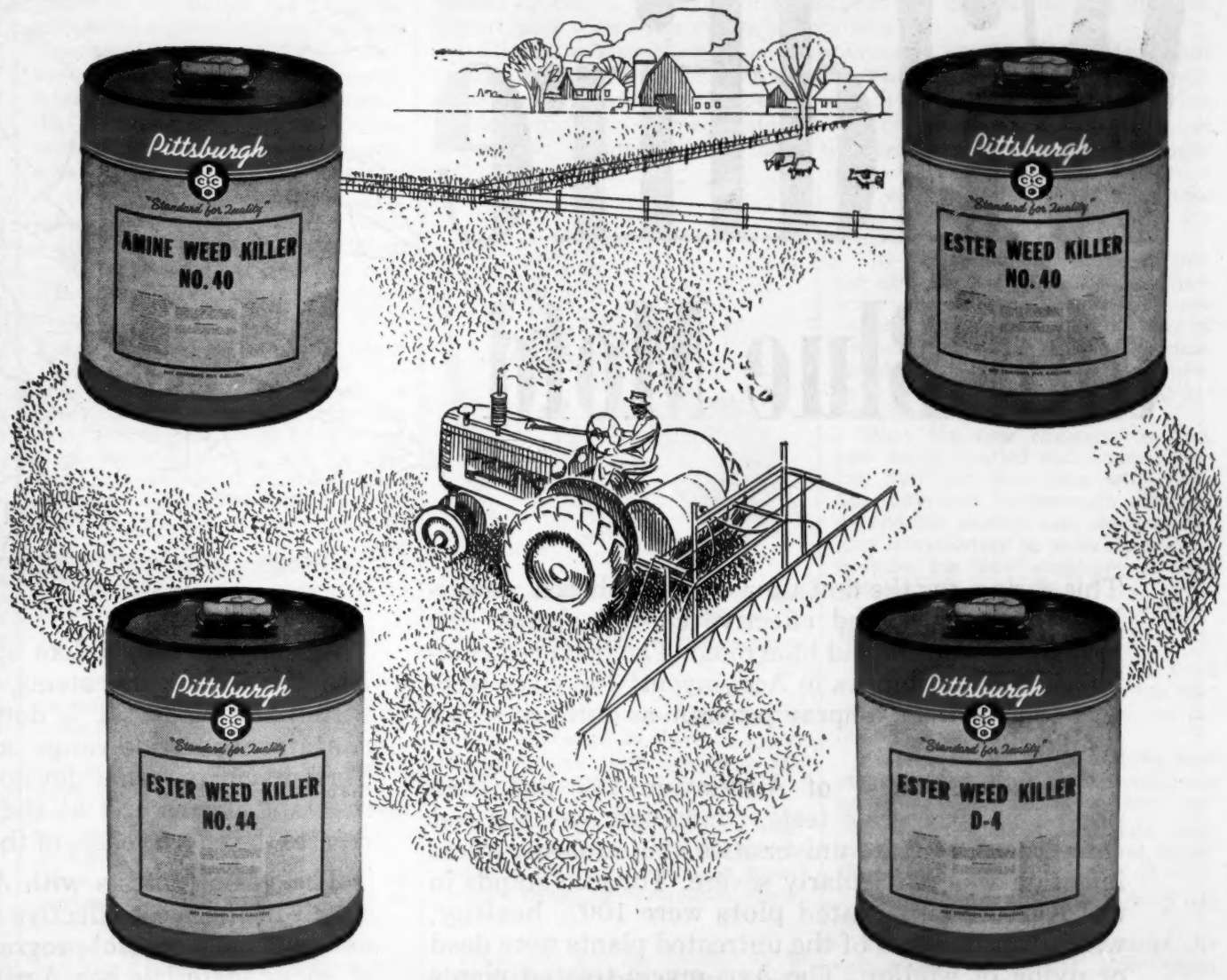
Considerable praise for the helicopter came from Albert H. Luke, Lewis College at Lockport, Ill. He predicted such a machine would some day be produced at a cost no greater that that of a tractor. Present payloads are too small and cost of machine too high to make it the farmer's "right arm" yet.

Work at Lewis College has convinced them, however, that seeding, dusting, spraying, fertilizing and even herding of cattle can be done. When these helicopters get as cheap as tractors, Mr. Luke said, "all seeding, dusting, spraying and fertilizing will no longer depend on the dryness of the earth that handicaps today's equipment."

Pest Control Firms Form Organization

WICHITA, KANSAS — Pest control firms with operations in four states met here Feb. 25 to perfect the organization of the Society of Professional Pest Control Operators, to be chartered in Kansas. Forty men attended the business meeting.

William J. Hawks was elected president of the new society; Ervin Syfert was named vice president; and Richard Evans was named secretary-treasurer. All are from Wichita.



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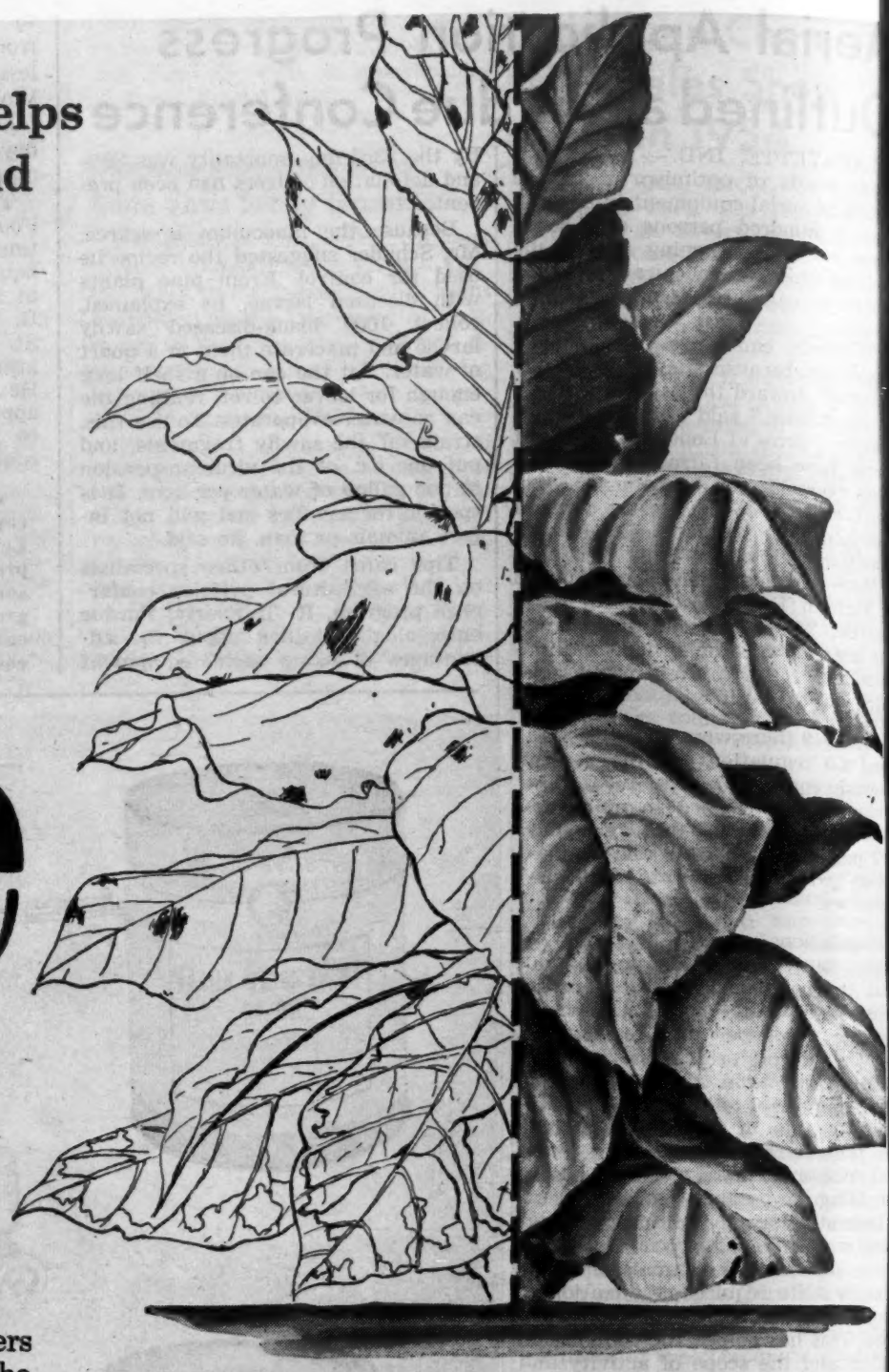
New antibiotic crop-saver helps insure a full, healthy stand

Now you can spray away Wildfire and Blue Mold



This spring, for the first time, burley tobacco growers have a powerful and effective control against the ravages of wildfire and blue mold. The balanced combination of antibiotics in Agri-mycin* 100 gives positive control when a spray program as outlined below is followed.

The effectiveness of Agri-mycin 100 has been proved in large scale tests, conducted over the last three years, at state universities and on farms where infection was particularly severe. Tobacco stands in the Agri-mycin-treated plots were 100% healthy, while over one-half of the untreated plants were dead or dying of wildfire. The Agri-mycin-treated plants also had larger, more vigorous root systems.

Agri-mycin 100, unlike other sprays, is absorbed into the leaves and stems, fights the disease from within the plant. It is doubly effective because it contains the wide-range antibiotic Terramycin®. Terramycin prevents development of streptomycin-resistant strains and at the same time actually increases the effectiveness of the streptomycin.

The years of tests with Agri-mycin 100 have resulted in the most effective and lowest cost wildfire and blue mold control program. Your regular supplier of spray materials has Agri-mycin 100 now. Use it this spring to help insure a top yield this crop-year.

One bottle of Agri-mycin*100 makes 50-100 gallons of spray solution, depending on concentration employed.

How to use for Wildfire and Blue Mold

Recommended Concentration	First Spray	Follow-up Sprays
200 parts per million. (One bottle makes 50 gallons.)	*For Wildfire.* When seedlings are in 2-leaf stage. *For Blue Mold.* When seedling leaves are about 2 inches long.	At least 4 sprays at 5 to 7 day intervals. Additional ½ strength spray (100 ppm) may be applied weekly to extend control period.

FOR CURATIVE ACTION: Apply three weekly sprays at 400 ppm (2 bottles make 50 gallons) for cure of Wildfire.

Agri-mycin* 100

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World's largest producer of antibiotics

Terramycin® brand of Oxytetracycline

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A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

Growing Market for Farm Chemicals

Golden Corn for the Golden State

A multitude of recent events has resulted in California's obtaining a huge corn crop increase this past year, and point to the state's bidding high toward supplying a good share of its own feed corn needs in the future.

The extensive use of hybrid corn varieties adopted from the Midwest, proper irrigation procedures, a dash of new methods in harvesting, mixed in with proper fertilizer usage and a replacement crop for quota-cut cotton and sugar beet acres—all these things have given California's farmers a sufficient reason to see corn in a new light.

Corn in 1952 and 1953 was up over the 10-year average of 1943 to 1952, but it took the shot-in-the-arm of cotton and sugar beet allotments to really start the ball rolling in corn production in 1954. Even in areas such as the northern part of Sacramento Valley, where corn has been known only as a silage crop, fields turned out fairly good yields in grain.

An indication of how corn has jumped into the foreground as a crop can be seen in the tremendous increase in acreage and yields of 1954 over 1953.

In 1953 there were 76,000 acres in corn, some 6,000 over the 70,000 acres of the 10-year average for 1943-1952. In the fall of 1954, 160,000 acres were recorded having been planted to corn for grain, silage and forage. That is 84,000 more acres planted to corn than during the previous season. Most of this increase was in grain production.

Yields that were recorded at 36 bu. per acre in 1953 jumped to 48 bu. in the 1954 season. Harvest time showed approximately 7,680,000 bu. of corn coming off the California fields, whereas the year before only 2,736,000 bu. were harvested.

Proper fertilization and new hybrids have created an upswing in corn production in California. This corn, grown on the Reineke Ranch, near Modesto in the heart of the San Joaquin Valley, is typical of yields obtained during 1954.

To jump yields per acre up the 12 bu. over the previous year called for growers to revise some of their corn-growing procedures in light of new findings by the Experiment Station and seed-growers. One of the chief items was increasing actual nitrogen to 100 lb. per acre (500 lb. ammonium sulphate equivalent), with phosphates being supplied where they were shown to be needed in growing other crops. It was also discovered that fertilizing at seeding time, something that wasn't too universally done, helped boost yields. Irrigation of corn with ample moisture being supplied the early growth was found a must, with irrigation taking place every 10 to 12 days. Once the corn was dented, irrigation ceased, however.

San Joaquin Valley farmers, where yields were highest relied on University of California experiments to point the way to use of hybrids with best and biggest yields. Several of these varieties yielded over 8,000 lb. corn per acre, and the farmers took to using such famous names as Pioneer 300, 302, 506, 352; De Kalb 666, 1002 and 1022, Pfister 347, 170, 383; Kingscrost K3A, KR2; Vinton 34. The rate in most fields has been at 10 to 12 lb. when grown for silage.

Improved Harvesting

A good amount of the rise in California corn has been due to improved methods of harvesting. Combine corn harvesters that attach to grain harvesters used in the rice and barley fields along with shellers where these aren't available, have aided in bringing down the cost of harvest. Corn growing in the past was held back because of its relatively high cost of production and harvest compared to other crops. Corn, for instance, couldn't compete favorably with cotton, sugar beets, beans, potatoes and other field or row crops.

Planting early in the spring gets corn off to a good start and allows the farmers in many regions to harvest their corn crop just before planting the same ground to rice or winter grains in September.

As to cost, California corn has been higher priced per bushel than midwest corn, but due to the ease of obtaining it and the fact that midwest corn must charge transportation, it is equal to or cheaper than the out-of-state grain. In Merced County, in the center of the state and the heart of the San Joaquin Valley, the total cost per acre of corn on irrigated land was approximately $87. This took into account labor at 85¢, heavy tractors at $2.50 and light tractors at $1 per hour—and also included taxes, repairs, insurance and other detail production costs.

California will never be a big competitor with the corn-growing states. Corn can't compete with other crops for the better lands. Such land as that used for truck crops, orchards, berry production, flowers, even barley, rule out the use of corn as a major crop at this time. Although used in rotation, it will not be grown as extensively as the midwestern rotation corn crop.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

Every now and then the dealer, finding it necessary to hire an employee either as an addition or replacement, sets about accomplishing it without any forethought. Too often the employer takes the easiest approach, hires the first prospect and shunts him off to some urgent task with little or no instruction.

Hiring and training a new employee is costly. The cost is not readily apparent because it is hidden. The new employee who is not properly prepared draws wages for which he returns little. In addition another employee is often assigned to provide assistance and guidance — however haphazard — to help the new employee along. Proper preparation is necessary to get a new worker started right and make him efficient and valuable to the dealer.

The dealer should remember that the new employee's first impressions are the crucial ones. He doesn't know anyone, he probably has no idea of what is going on, he doesn't know his way around the plant or store, he's nervous, tense and trying his best to make and look good.

What the new employee is told, how he is handled and trained during the first few days will make the difference between an efficient, dependable worker and one who begins immediately to show disinterest because his new employer is also disinterested.

Use This Outline

The Pennsylvania Millers & Feed Dealers Assn. suggests that the employer consider this outline for inducting a new worker:

Purpose — What should the new employee get from the introduction program? What should the firm get?

Content—What routines and regulations must be explained at once? Which ones later?

Responsibility—Who will carry out the program?

Timing—In what order must the information be given? How much shall be given at one time?

The First Week

An adequate program can be worked out in a short time by using this employer's induction program check card, the Pennsylvania association report states:

Advance preparation—If time cards are used, have one ready. Fix the new employee's name firmly in your mind. Arrive early so as to be there to greet the new employee on time.

First day—Greet the new worker. Smile. Give him his time card. Explain time clock procedure. By personal interview, acquaint him with rules and regulations of your business, including starting and quitting time, lunch time, hours of work, review the entire pay situation, purposes of each department of your business, names of the various machines and tools and location of the rest room, water fountain and "no smoking" areas. Give him a "cook's tour" by showing him the entire operation. Introduce him to all employees and if your business is large enough, turn the new employee over to the foreman or department head for job instructions. Before the end of the first day the new worker ought to be

(Continued on page 13)

Spring season is coming on fast and I know how busy you'll be . . . get a bit more help at rush seasons . . . take a little time off and go with me to some field meetings . . . let's show our friends, the farmers, we are interested in them . . . they certainly have their problems and 1955 will prove no exception.

Now when I invite you on a field trip of inspection, why don't you invite a furniture dealer, an automobile dealer, a department store manager.

They will get an insight, as to what makes business click . . . they will realize the importance of a good agriculture in your area . . . they will also realize the important part you dealers and your products play.

The farmers will welcome all of you to their places . . . remember the first sale starts on the land.

The farmer who uses the correct amount of plant food is the fellow producing parity plus. Remember 160 million folks wake up hungry every morning, and it takes a lot to fill 'em up.

Hybrid thinking will produce better business.

(Order that 24-page reprint of the Bug of the Week from Croplife.)

Halogeton Campaign Planned in Wyoming

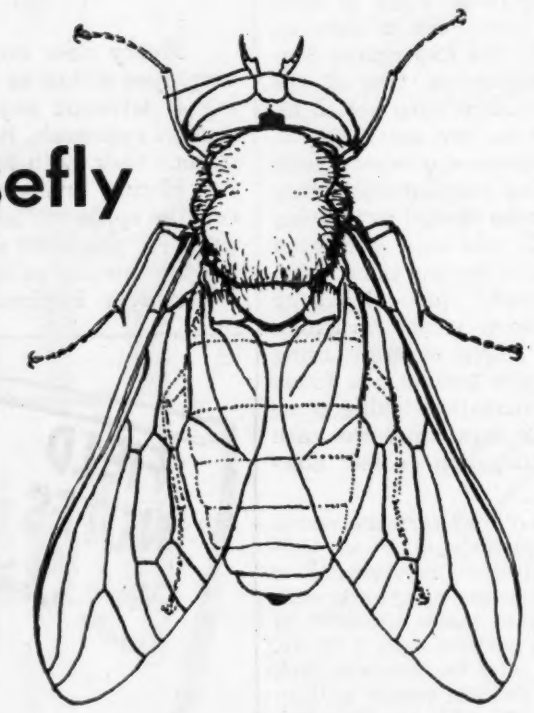
GREEN RIVER, WYO.—The Union Pacific Railroad, ranchers and four Wyoming and federal agencies will launch an attack in southwestern Wyoming this spring against halogeton.

Plans to spray the weed were laid at a recent meeting here, according to Ivan Vickers, regional manager of the Bureau of Land Management.

BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Horsefly



How to Identify

Horseflies are usually quite large, which is their most obvious characteristic. There are several hundred species of horseflies in the U.S. The front wings are horny, rigid and opaque. They are without veins, meeting in a line over the middle of the body and concealing the membranous rear wings. On most species, front wings are usually membranous, although often covered with scales or hairs. Horseflies range in length from less than a half inch to a full inch.

Habits of Horseflies

Most of the horsefly species breed in moist places. Development from egg to adult may require only a few months or even as much as from one to two years, depending upon the species. In the maggot stage, the insect is a couple of inches long and in this form is pointed at each end. They spend the winter in this form, hibernating in the mud of rivers or lakes and even wet land areas. The flies begin to appear in early summer, soon lay their eggs on leaves of aquatic plants where the maggots may later fall into the water. Once in the water, the maggots sink to the bottom and burrow into the mud.

Damage Done by Horseflies

Although these insects will attack many types of warm blooded animals, they prefer horses and mules. They cause great annoyance to livestock, and, more seriously, are carriers of diseases. Equine infectious anemia, or swamp fever, is thought to be carried by horseflies, as indicated by the fact that this disease reaches its height in the summer and by the persistence of the virus in the blood of infected hosts. Horseflies suck blood from the animals and cause acute physical discomfort to the animals in the process. The flies attack only in the daytime. Although horses and mules are the target of the major portion of their attacks, the horsefly causes economic damage on other domestic animals as well.

Control of Horsefly

Complete satisfactory methods of control of the horsefly have not been developed as yet. A number of chemicals have proved effective to a considerable extent, however. DDT and methoxychlor, pyrethrum and piperonyl butoxide, toxaphene, chlordane, aldrin and BHC are among the toxicants named by various sources as being useful. Repellents have also been beneficial. These included 10% butoxypolypropylene glycol 800 in deodorized kerosene, as well as pyrethrins and piperonyl butoxide.

Drawing of Horsefly furnished Croplife through courtesy of U.S. Department of Agriculture, Washington, D.C.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

FARM SERVICE DATA
Extension Station Reports

Commercial fertilizer, properly employed in combination with all available organic matter, provides the efficient farmer with his best tools for the maintenance of fertility, or the crop production capacity of his soil, according to the California Fertilizer Assn.

Organic matter, whether in the form of animal manure, cover crops or crop residue, is converted by the soil micro-organisms into humus, which increases soil tilth and water permeability. However, says the association, in recent years, a small but very active organic gardening and farming cult has been making claims which are unsubstantiated, according to university authorities.

These statements are to the effect that chemical fertilizers are harmful to the soil, to animal and vegetable life, and that they produce less nutritious crops than do organic fertilizers or ground rock.

In their single-minded zeal they condemn most chemical sources, adds the association, which says that reliance must be placed upon chemical fertilizer to supplement available organic matter, as it is not economically possible to produce enough organic material to supply the plant food needs of the world. The association points to these examples of many available authoritative statements which refute these claims.

Dr. L. M. Turk, head of the Soil Science Department of Michigan State College says "no proof has been offered that crops grown without chemical fertilizer are more free from disease and insects than are those produced with fertilizer."

The University of California has published the following—"Many of the nutrients in organic matter become available very slowly and with less than 100% recovery. The nutrient salts absorbed by plants are identical whether produced by decay of organic matter or in a chemical factory."

Dr. Richard Bradfield, head of the Agronomy Department of Cornell University says, "I cannot support some of the claims made for crops grown with organic fertilizers, such as freedom from disease and insects, and that such crops are more nutritious."

★

Spring is the best time to add nitrogen fertilizer to winter wheat in western Oregon, according to two-year trials just announced by researchers at Oregon State College, Corvallis. Spring applications ranging up to 60 lb. actual nitrogen per acre have produced as high as 25-bu. yield increases in this region, it is reported by T. L. Jackson, OSC soils specialist. Fall applications gave little yield increase due to heavy leaching of the plant food by western Oregon's steady winter rains, he said. Mr. Jackson recommended nitrogen applications about the first of April, in advance of spring rains.

★

It's not uncommon for farmers to double pasture and meadow forage yields with fertilizer. The proper fertilizer on a pasture helps control plant mixtures, promotes balanced grazing and means more profits for producers.

More profits, how much? Every dollar spent for fertilizer returns $2 to $10 in increased production, depending upon the crop, rainfall and management, says E. M. Trew, Texas A&M extension pasture specialist.

Mr. Trew says more forage of better quality can be produced with less water if plenty of plant food is available. Water and plant nutrients are closely tied together, he explains. In recent tests at College Station, 22 in. of water were required to grow a ton of Coastal Bermuda hay. An application of 100 lb. actual nitrogen an acre, however, cut the water requirement to only 13 inches.

★

A recently issued U.S. Department of Agriculture handbook provides information regarding fertilizer use on major crops in the various geographical areas of the country, presented in figures for each state. The western section covers the states of California, Arizona, New Mexico, Nevada, Oregon, Washington, Idaho, Montana, Wyoming, Colorado and Utah.

Table 104 shows the use of fertilizer on cotton. In California an average of 55 lb. nitrogen, 12 lb. phosphoric oxide and ½ lb. potash were applied to the land in production. The average yield was 842 lb. lint cotton per acre, which was only 87% of the potential according to the report.

Table 106 on sugar beets indicates an average yield of 19 tons per acre which is 76% of the potential. An average of 86 lb. nitrogen, 34 lb. phosphoric oxide and 6 lb. potash were applied.

Table 108 reflects an average yield of potatoes of 391 bu. per acre which is 78% of the potential; 109 lb. nitrogen, 38 lb. phosphoric oxide and 12 lb. potash were employed on each acre.

★

Methoxychlor is a safe insecticide around dairy stock, according to insect specialists at the University of Idaho. Tests have shown that ordinary amounts likely to be left on hay are not enough to show up in the cow's milk.

★

A guide for recognizing and controlling diseases in peppermint has been published by the agricultural experiment station at Oregon State College. The bulletin, "Control Peppermint Disease," lists mint rust as the most destructive disease in Oregon. Information is given on what causes the disease, how to recognize it, how it spreads and how it reduces yields. Control methods include changing farming practices and dusting or spraying. Proper amounts and procedures of applying chemicals needed are given along with the necessary farming practices.

Another mint disease listed in the publication — prepared by C. E. Horner, assistant plant pathologist —is verticillium wilt. A section is devoted to what causes wilt, how it spreads and how to recognize it. Growers are told how to control the disease by preventing its introduction and spread.

Other diseases that attack mint in Oregon included in the bulletin are nematodes and root rots, and the minor disease, mildew, leaf blight and black stem rot.

★

The battle against cattle grub is gaining tempo in the Pike's Peak Region of Colorado as cattlemen are spraying or dusting their herds with Rotenone.

Ralph Swink. El Paso County agricultural agent, recently issued a paper describing the amount of damage which grubs do annually in the cattle industry. He showed that over a one year period, 1946-47, during the grub season, the average loss per head on grubby cattle jumped from $3.56 to $6 a head. The losses in all areas of influence are estimated to exceed $100 million a year.

★

Low crop yields are like an embezzler who keeps the company profits skimmed off, says the California Fertilizer Assn., which adds that in cases of low yield, profits are eaten up by farm production costs. The association points out that low yields can be converted into high yields and high profits for the farmer who uses sound soil building and other crop production methods, including the use of heavy amounts of mixed fertilizer containing nitrogen, phosphate and potash.

Employment of approved farming practices will afford an increase in yield per acre, which means more profit for the farmer even though the prices which he receives for his crops may decline. University and Department of Agriculture authorities on plant nutrition are agreed that even though farmers now use an average of only about 50% of the fertilizers they should use for the best economic results, the fertilizer now employed accounts for about 25% of our total crop production.

★

Peach and plum trees will grow-off faster and offer chances for bigger harvests if treated early in the year with a complete fertilizer.

Three-hundred to 400 lb. 12-12-12 in February or March followed in April by a 300 lb. application of 5-10-10 will do the job in an orchard of 70 bearing trees an acre.

Four to six pounds of the 12-12-12 mixture should be spread around each tree and a like amount of 5-10-10 in April, advises J. F. Rosborough, Texas A&M extension horticultural marketing specialist.

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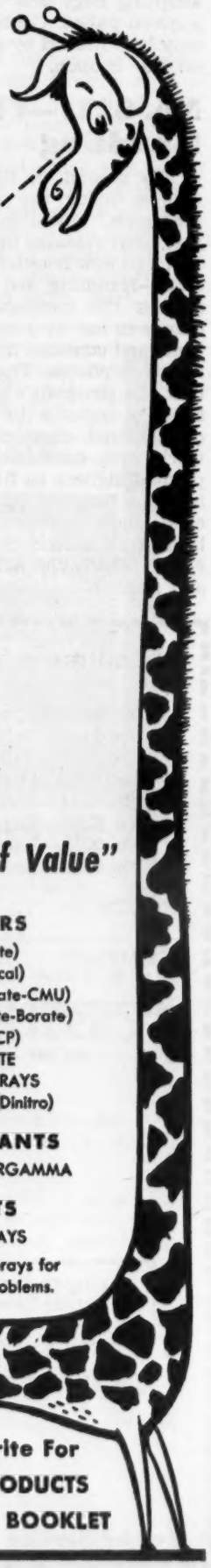

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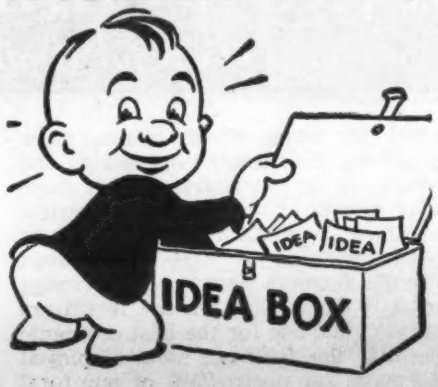


What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6212—Bag Handling

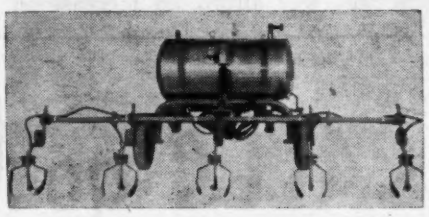
Arkell & Smiths is offering a 10-page bulletin on "Palletizing Filled Multiwall Bags." Based on laboratory tests and field checks, and complete with detailed drawings, the bulletin contains useful ideas and suggestions to facilitate handling, shipping, and adapting bags now being used, to fit a given pallet. Copies of the bulletin may be obtained by marking No. 6212 on the coupon.

No. 6217—Chemicals Handling

The second in the series of brochures under the general heading: Materials, Machines & Motions has just been released by Sauerman Bros., Inc. The new booklet is titled, "Chemicals—Handling and Storage." It describes the company's storage machines in use at a variety of installations and contains many layout drawings and photos. The brochure shows how the company's engineers develop storage systems to meet the needs of the bulk chemicals industry and work with consulting engineers and plant designers to fit scraper storage into the building plans. Basic chemicals and corrosion are discussed briefly. To secure the booklet (MMM No. 2) check No. 6217 on the coupon and mail it.

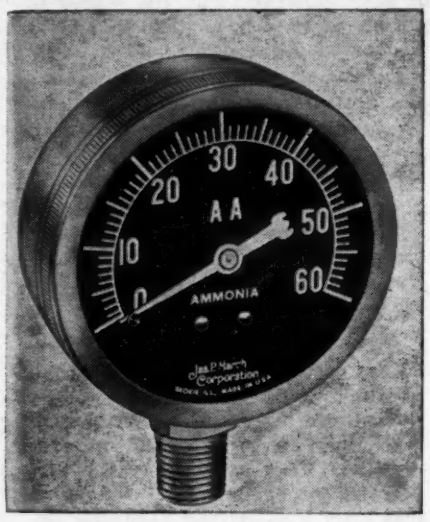
No. 6218—Applicator

A new PTO operated liquid nitrogen applicator for applying pressure or non-pressure solutions is being manufactured by Spra-White Chemical Co., Inc. It can also be used for insecticides and herbicides, as it is available with boom or boomless nozzles for broadcast application, company spokesmen said. From 10-200 lb. of nitrogen per acre may be applied and up to 80 acres may be covered in a day, used before planting or while side-dressing, it is claimed. Application depths up to 6 in. and positive mounding of earth over the nitrogen are specified. The 200-gal. tank is equipped with calibrated sight glass and 30 lb. psi working pressure is possible. To secure more complete details check No. 6218 on the coupon and drop it in the mail.



No. 6206—Gauges

Two new gauges have been added to the Marsh Instrument Company's line of agricultural ammonia instruments—one graduated 0-60 lb. and the other graduated 0-150 lb. Both gauges are standard with 1 lb. primary divisions and are designed for use on metering devices. Other gauges manufactured are 0-400 lb. and 0-300 lb. for bulk plant installations and also two compound ranges—30 in. x 150 lb. and 30 in. x 300 lb. A new feature now available is the recalibrator for recalibrating a gauge. Secure more complete information by checking No. 6206 on the coupon and mailing it.



No. 6205—Bulletin

Harnischfeger Corp. recently issued its revised grab bucket crane bulletin. Several of its 24 pages are devoted to suggestions on selecting the proper type of grab bucket crane for a specific service. Features of the unit with large pictures and text, are included as are clearance dimensions. The bulletin is departmentalized to show grab bucket cranes in various services, with a spread of pictures showing modern fertilizer plants. The bulletin may be obtained by checking No. 6205 on the coupon, clipping and mailing to the address provided.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 6211—Weed, Grass Killer

A non-selective weed and grass killer has been announced by Chipman Chemical Company, Inc. This new product is called Chlorea and, is claimed to kill all types of vegetation. It is a non-separating combination of sodium chlorate, borate and CMU—chlorate for deep-rooted weeds with the prolonged soil-surface action of CMU on shallow-rooted grasses and annual seedling growth. The company announcement states: "It also has a lasting residual effect to inhibit re-growth. Chlorea is non-poisonous and, because of its borate content, does not create a fire hazard when used as directed. It can be applied dry or used as a water-mixed spray." Further information and literature may be obtained by checking No. 6211 on the coupon, clipping and mailing it.

No. 6221—Corn Rootworm Folder

Designed to tie in with the current Velsicol Corp. "Kill Corn Rootworms" campaign in the corn producing areas of the nation, a new corn rootworm quiz folder for dealers and customers alike has been published. Touching on important phases of corn rootworm control from "What are corn rootworms?" to "What are the essential requirements of a corn rootworm insecticide?", the 19 questions and answers in this quiz show how Heptachlor insecticides are used in the control of this pest. These folders, with space for imprinting name and address, may be secured by checking No. 6221 on the coupon and dropping it in the mail.

No. 6219—Equipment Catalog

The Gotcher Engineering & Manufacturing Co. has available for free distribution its 1955 anhydrous ammonia equipment catalog. The company's line includes field applicating equipment including tractor mounted, semi-mounted and pull-type ammonia applicators. To secure the catalog, check No. 6219 on the coupon and mail it.

No. 6220—Soil Fumigant

Larvacide Products, Inc., recently announced a new addition to its line of ethylene dibromide soil fumigants sold under the trade name, Nemex. The new addition, Nemex-85, is a formulation of ethylene dibromide containing 83% by weight toxicant. The control of nematodes and certain other soil-borne pests in infested soils with the new product is said to improve root development and vigor, increasing resistance to drouth and certain wilt diseases. Good results are claimed on infested soils on such crops as tobacco, cotton, peanuts, vegetables, ornamentals, and even in peach orchards when used as a pre-planting site treatment. For literature check No. 6220 on the coupon and drop it in the mail.

No. 6216—Fertilizer Film

The Spencer Chemical Co. has produced a 16 mm., 27-min. color movie called "George Tackles the Land" and is accepting bookings for future showings without charge. The film stresses fertilizer usage for corn, cotton, citrus groves, celery and pastures. Information about showing the film may be secured by checking No. 6216 on the coupon and mailing it to this newspaper.

No. 6208—Pesticide

VAPAM, a new pesticide, has been announced by the Stauffer Chemical Co. Consisting of sodium N-methyl dithiocarbamate, this product is claimed to be stable in the commercial concentrated solution, but decomposes rapidly in damp soil to liberate a penetrating gas which dissipates in a few days. Under most conditions, crops may be planted within seven days after soil treatment. A general purpose soil fumigant, VAPAM is said to control practically all types of soil-borne diseases, nematodes, growing weeds and weed seeds, as well as certain species of soil infesting insects and related pests. Although especially suitable for seed bed treatment, VAPAM also shows promise for a wide range of soil problems a company release

Send me information on the items marked:

- ☐ No. 6204—Plant Antibiotic
- ☐ No. 6205—Bulletin
- ☐ No. 6206—Gauges
- ☐ No. 6208—Pesticide
- ☐ No. 6211—Weed, Grass Killer
- ☐ No. 6212—Bag Handling
- ☐ No. 6213—Lawn Fertilizer
- ☐ No. 6214—Brochure
- ☐ No. 6215—Herbicide
- ☐ No. 6216—Fertilizer Film
- ☐ No. 6217—Chemicals Handling
- ☐ No. 6218—Applicator
- ☐ No. 6219—Catalog
- ☐ No. 6220—Soil Fumigant
- ☐ No. 6221—Rootworm Folder

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states. The product is highly soluble in water and requires no special equipment. VAPAM can be introduced into the soil through irrigation equipment, to the plow sole, or to the ground surface in connection with the use of a rototiller. With suggested methods of application no ground coverings are required. To secure more complete details check No. 6208 on the coupon and mail it to this newspaper.

No. 6213—Lawn Fertilizer

Smith-Douglass Company, Inc., has introduced its new plant food, called by the trade name of Nutro plant food pellets, in southeastern U.S. The product is pelletized and homogenized (see photo) and literature describing it states that it is clean, dustless and odorless. Formulated with the home gardener in mind, it

can be used spread by hand or with a spreader. It is not necessary to rake or wash down the fertilizer, it is claimed, since the pellets bounce off the leaf to the ground. It is packaged in 10, 25, 50 and 100-lb. bags, and comes in two forms—regular or instant. The instant from dissolves in water, and can be used for foliage and root feeding. In liquid form it can be sprinkled on leaves for foliage feeding, poured around the roots as a starter, or sprayed on large areas. Instant Nutro, it is explained, can also be used in the dry form. Also being manufactured is Nutronite, an all organic (animal waste) fertilizer with 9% nitrogen. To secure literature describing these products check No. 6213 on the coupon and drop it in the mail.

No. 6204—Plant Antibiotic

Agri-mycin 100, trade name for an antibiotic spray powder, is described in a new bulletin recently released by the Agricultural Sales Division of Chas. Pfizer & Co., Inc. The bulletin's summary states: "Agri-mycin 100, an antibiotic formulation of Streptomycin and Terramycin, is recommended for the control of a number of plant diseases. The possibility of building up resistant strains is greatly reduced by using this combination of antibiotics. The active ingredients of Agri-mycin 100 are readily soluble and are rapidly absorbed by the plant, providing systemic protection. Agri-mycin 100 is a stable, free-flowing, noncorrosive, fine powder intended for use in standard sprayers." To secure this bulletin check No. 6204 on the coupon, clip and mail it to the address provided.

No. 6215—Cotton Herbicide

Geigy Agricultural Chemicals has announced a new herbicide for cotton. Designated as Geigy 444, the compound is 2-chloro-4, 6-bis-(diethylamine)-s-triazine. Excellent results as a pre-emergence and post-emergence herbicide, in directed as well as overall applications are claimed. Rates as high as 24 lb. per acre have been applied as pre-emergence treatments without phytotoxic effects. Directed and overall post-emergence sprays, applied at a rate of 12 lb. of the product per acre produced no reduction in growth. Slight burning resulted from overall applications. Successful tests on other crops, including lima beans and peas, have been made, with varying control of nutgrass, broadleaved weeds and annual grasses being obtained. For further information and experimental quantities, qualified research personnel are invited to check No. 6215 on the coupon and drop it in the mail.

No. 6214—Fertilizer Brochure

A new brochure entitled, "Make Bigger Profits with USS Ammonium Sulphate," has been published by United States Steel Corp. The color brochure presents a breakdown by crops (corn, oats, wheat, barley, rye permanent and supplementary grass and apple and peach trees) with recommendations for quantities of ammonium sulphate per acre, method of application, when to use and various suggestions for its use. Sections are devoted to fall application of fertilizer and returns possible through use of the company's product on pastures and small grains. Check No. 6214 on the coupon, clip and mail it to secure the brochure.

Fertilizer Pays Off In Increased Yields In West Texas

LUBBOCK, TEXAS—Field tests in West Texas during 1954 have shown that commercial fertilizers pay off. At the Amarillo experiment station the use of 80 lb. nitrogen increased grain sorghum yields by as much as 1,300 lb. per acre. Phosphorus also gave a boost in production. The highest yields came from applications of 80 lb. each of phosphorus, nitrogen and potash.

At the Denton station oat yields were increased over 9 bu. per acre and wheat 25 bu. by an application of 60 lb. phosphorous acid and 30 lb. nitrogen.

In Lam County the highest corn yield in the state was achieved by the liberal use of nitrogen and phosphorus fertilizers.

In Midland County a county cotton record was broken on the H. R. Solomon farm when he made nearly three bales per acre.

"It takes one bale per acre to make the crop," Mr. Solomon said. "Anything in excess of this must be made by fertilizer. Heavy fertilization and regular spraying is what made this cotton crop one of my most profitable ones."

Entomology Saves Idaho Farm Enterprises

Several Idaho agricultural enterprises "owe their life" to entomology, according to H. C. Manis, head of entomology in the University of Idaho College of Agriculture.

Except for insecticides and control methods introduced through a University of Idaho-U.S. Department of Agriculture cooperation there would be no pea industry in the state today. That control stopped the weevil.

Idaho is an important hay producing state today because entomologists showed how the alfalfa weevil could be licked. "Without control of the codling moth there would be no apple industry today," Mr. Manis notes.

NORTH DAKOTA ELECTION

FARGO, N.D.—George Sauer, Bismarck, N.D., has been elected president of the North Dakota Seed Trade Assn. Clarence Sande, Grand Forks, was named vice president, and George F. Will, Jr., Bismarck, secretary-treasurer.

OVER THE COUNTER

(Continued from page 9)

given a half hour for asking questions.

Within the first week—Allow time for a personal interview. Explain employee benefits, such as group insurance. Find out how he likes his job and what he's thinking. Clear up any misunderstandings he may have. Give him the opportunity to ask questions.

The association's report concludes by stating: "A good induction program, carefully thought out and diligently followed, is an investment that will pay huge returns in a better, happier, more efficient work force."

Advertising Pays

"Believe it or not, it's true. In the depths of the depression of 1932, we began advertising more aggressively when most everyone else was crawling into a shell. We were spending around $40 per day advertising on radio and thought this was a tremendous expenditure. We wondered if we could ever make it."

These are the words of a manufacturer of farm products which appeared in the company's news bulletin recently. Yes — the company "made it" and the article goes on to discuss how its success came about and is continuing.

"Today, we spend approximately $1,000 per working day for advertising and are increasing our advertising budget regularly.

"Yet, when this is broken down into the cost per unit that is sold, the amount per unit is infinitesimal.

"Here is a case where advertising helps us sell to the consumer cheaper. It is a case where advertising saves cost rather than increases cost because as we advertise and increase our volume, we reduce our cost of producing a unit and this saving is passed on to the consumer.

"Don't let anyone kid you about the public paying for advertising.

"If advertising is properly handled and is effective, it will save the consumer money. This is a true story and you can well afford to adapt it to your business in proportion to your operation and volume.

"You will always be grateful that you did."

The voice of experience is one we can always afford to listen to.

Sound Advice

As a means of increasing their sales, members of the Oregon Association of Nurserymen were told recently to have their retail store outlet set up on a quick service basis, maintain well lighted, clean and seasonally appropriate displays of their merchandise, take advantage of national advertising campaigns relative to products they are selling and otherwise improve their public relations program within the store itself.

LOOK for the ANCHOR on your TREBLE Superphosphate

ANCHOR BRAND
TREBLE SUPERPHOSPHATE
Free Flowing • Dust Free • Pelletized
—Guaranteed 46% • Available Phosphoric Acid • High Water Solubility
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SOILS and FERTILIZERS
Fourth Edition

By FIRMAN E. BEAR, *Research Specialist, New Jersey Agricultural Experiment Station.*

In plain language, this new edition tells how recent *modern* advances in soil technology affect plant growth and annual yield . . . and how the effective use of basic methods can increase the productiveness of farm lands. New facts, accurate figures, and 66 pointed illustrations show the relation between crops and soils.

1953. 420 Pages $6.00

Covers in detail: soil chemicals . . . important soil elements such as nitrogen, phosphorus, calcium . . . yield prospects of crop plants . . . moisture control . . . soil management . . . mechanical operations . . . soil conservation . . . organic matter maintenance.

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P.O. Box 67, Minneapolis 1, Minn.

Better Selling

Richer Sales Fields for Dealers

TEXAS DEALER—Donald E. Peterson, right, manager of the South Texas Feed & Seed Co., is shown above explaining to a customer the use of an insecticide for his lawn.

TEXAS DEALER SAYS

Pest Control Items Represent Longest Profit Lines in Store

Pests are a nuisance to the gardener, farmer and householder whose premises are invaded, but they represent a real profit opportunity for the farm supply dealer, according to the experience of South Texas Feed & Seed Co., Kingsville, Texas.

"These pest control items represent the longest-profit lines in the store," declares Donald E. Peterson, manager. "We push them the year-round, but particularly the line is good in spring and fall."

The company does about $10,000 worth of pest control business a year.

Business comes from two general sources: pest control men, who make a business of ridding premises of pests, particularly termites; and home owners and gardeners who treat their own premises against pests.

Mr. Peterson says there is no conflict in going after both types of customers. The professional control men do not object to the company's selling pest controls direct to the consumer, since the average man who wants to handle his own pest control problem is not a prospect for the professional pest control man, anyway, he says.

Mr. Peterson has built up a steady volume with the professionals by calling on them in person and assuring them that he is able to supply them with whatever they need in carrying out their work, thus relieving them of stocking the merchandise themselves. He makes periodical calls, mainly to keep on friendly terms with them and to keep reminding them of his store's available services.

"Selling directly to the user of pest controls is a little more detailed," Mr. Peterson says. "Many small-order buyers know little or nothing about using the various pest controls, and it is a part of our selling job to show or tell them how to get best results."

The average individual order is small, but the aggregate is sufficient to make the line the most profitable in the store.

When a customer comes in and inquires about poisons, the first thing Mr. Peterson does is to ascertain exactly what type of pest is bothering the customer and where it is. He makes his recommendations from there, determining by his conversation with the customer whether to recommmend liquid or powder applications.

If the job suggests that liquid poison is better, the company lends the customer an applicator, on his promise to return it as soon as he has finished with it. Seldom is it necessary to call a customer to remind him to bring back the applicator.

The company has built a steady repeat pest control business among city home-owners, by pointing out to them the value of treating their lawns either in early spring or in the fall or both, as the problem suggests.

A number of customers today follow a regular routine of treating lawns either annually or semi-annually, and they come back to the feed store for their supplies as a matter of course. They keep coming back because they learned the value of pest control and how to treat their lawns originally by coming in and talking over their problems with Mr. Peterson.

Pest controls also help to sell fertilizers, Mr. Peterson finds, particularly to lawn owners and gardeners, as in many cases the two may be mixed and applied simultaneously. Here again much advice must be given to the average customer on the use of the combination, since the average individual customer may be using the controls for the first time.

Because of the warm humid climate of the area, termite controls are excellent sellers, Mr. Peterson says, and this is practically a year-round business, particularly in all but the three cool winter months. Once a customer buys termite controls from the store and gets satisfactory use from them, which Mr. Peterson assures by making certain that the customer understands what the control will do and just how to apply it, he comes back year after year for a duplication of the materials.

In extreme cases, rather than take a chance on a customer's botching a pest control job, Mr. Peterson will go out to the customer's premises and start him off right.

"We don't do this often," he says, "for the time involved is not justified by the small amount of the order. On the other hand, if the customer still seems a little confused or doubtful as to the proper use of the materials we have sold him, we'd rather go out and start him right than take the chance of his using the controls improperly and thereby failing to get satisfactory results. These infrequent visits with the customer invariably bring him back again and again. It pays in the long run, even though his initial order may be for no more than a couple of dollars."

Mr. Peterson not only knows pest control and how to use all of the items stocked but he has insisted that the men working with him know them also. As a result, anyone who sells pest controls is able to tell the customer how to use them.

The company also asks that the manufacturer of every line carried supply ample booklets, folders or other material explaining the use and application of their lines. First, Mr. Peterson and his staff study these materials. Then they give them out to customers, along with oral instructions on the use of the controls.

"You can't be too liberal with instructions," Mr. Peterson emphasizes. "It's better to repeat yourself and be doubly certain the customer understands than to tell him too little and let him mess up his first application."

The company advertises pest controls modestly in the local weekly newspaper, particularly in the spring and fall, and it uses two bulletin boards on the highway, alternating copy on these boards to fit the season.

The company has operated the store for six years. Pest control volume has increased materially every year since opening.

Pays to Spray

FARGO, N.D.—A 9 bu. an acre increase, or additional income equal to $5.50 per acre was realized last season by Ronald Burchill, Page, N. D., according to R. B. Widdifield, agronomist of North Dakota Agricultural College Extension Service. Mr. Burchill gained this additional income by using 2,4-D to control weeds in a field of Andrew oats. In the sprayed part of the field the oats yielded 61 bu. per acre with no dockage while in the unsprayed part of the field the yield was 52 bu. net, after deducting the 6% foul seed content.

Mosquitos Prove Valuable Helpers In Oregon Research

CORVALLIS, ORE.—Scientists at Oregon State College have found that mosquitoes are the key to a project, supported the past three years by Shell Chemical Corp., to test various insecticides used to kill insects in the soil.

Program objectives are to determine how much toxic, or poisonous residue, is still in the soil after the chemicals have done their work, and whether this will result in harmful effects or undesirable taste of crops planted in that soil. Such testing programs have been necessary for some 30 years under the Federal Food and Drug Act.

Because mosquitoes are easily killed by modern insecticides, they are used to play an important role in detecting the amount of toxicity that has been transferred from the chemically-treated soil to vegetables or fruit grown on it.

The technique is this: ten 5-day old mosquitoe larvae are put in a vial, two inches tall and about the size of a half-dollar, along with a portion of the vegetable or fruit being analyzed for toxicity. The larvae are fed on this for 24 hours. The number dead are then counted and compared with a standard—the amount of DDT necessary to kill the insect. The same process is repeated with increasing amounts of the material being tested.

Dr. L. C. Terriere, OSC agricultural chemist, who is heading up this phase of the testing program says the information obtained can be interpreted to determine how much and what kinds of insecticides can be used to treat the soil without resulting in harmful effects or undesirable taste of crops.

Although there always seem to be too many of the pesky insects around during the summer and fall, the scientists found that to be certain of a supply year round—10,000 are used each week—they had to grow their own.

ALFALFA WEEVIL CONTROL

MOSCOW, IDAHO—Roland Portman, extension entomologist of the University of Idaho says control of alfalfa weevil pays the individual farmer and is most effective when an entire community applies control measures.

POST TREATING—Vernon H. Burlison, extension forester at the University of Idaho estimates that $255,000 invested by Idaho farmers in post treating will result in $1,020,000 savings on post replacements during the next three years. Above he shows why. The post Mr. Burlison is holding is an untreated lodgepole pine from a test fence at the University of Idaho farm. Less than three years after it was set the post rotted completely off at the ground line. At the right are three posts that received penta treatment. The two posts nearest Mr. Burlison were set in 1941, and the one at the far right in 1942. They show no signs of decay.

Better Selling

Richer Sales Fields for Dealers

Doing Business With Oscar & Pat

It was late one afternoon and Pat McGillicuddy, partner in the firm of Schoenfeld & McGillicuddy was dictating a letter to a customer, with plump Tillie Mason recording it in her stenographer's notebook.

Pat had been dictating these "win back old or neglected customer" letters for the past two weeks now. He had a policy of dictating two such letters a week, and, as he told Oscar, his portly, balding, penny watching partner, "Two letters a week fifty-two weeks a year is one hundred and four letters."

"Bah," said Oscar. "You are wasting your time, McGillicuddy. Mostly deadbeats and slow pays, that's what those neglected csutomers of yours are. We want good customers, not the kind you're going after."

"Some are deadbeats, Oscar," agreed Pat, "but not all. I have sifted this list of customers carefully. I've culled slow pays and deadbeats, I'm only writing letters to good pay customers who, for some reason or another, are buying elsewhere. It costs money to win customers, so we ought to do everything we can to win back the old ones, as well as get new ones."

"Better you collect old accounts first instead of writing letters," Oscar said. "I get nervous every time I look at the accounts receivable."

"Oh, we can't bother some accounts every week," Pat said. "I'll start making some more collection calls next week. Meanwhile these friendly letters may bring some good customers back."

"Why do you have to waste time writing a different letter to each customer?" Oscar demanded petulantly. "Why not just give Tillie a list of the customers and have her write the same letter to each?"

Pat shook his head. "No, I think about each customer as I write. I want to make each letter as friendly and inviting as I can. I know many of the pet interests of these men, from hunting and fishing to growing special brands of potatoes, etc. I work a little of the personal element into each letter. I think it will pay."

"Bah, such foolishness," Oscar said, going back to sharpening pencils.

But slowly the letters did begin to pay off. Two old customers showed up and bought fertilizer within ten days, customers who had not been on the books for two years. Each shook Pat's hand warmly, and they even had a guarded wave of the hand to suspicious-eyed Oscar. After they left, Oscar checked their credit with the credit bureau by phone (while Pat was in the warehouse) and Oscar was quite put out when informed that the credit of both men was good.

Then one day Pat got a letter which he showed to Tillie while Oscar, as usual took the early lunch period 11 to 12 noon. "Take a look at this, Tillie," Pat said, "and swear not to tell a soul about it. One of our customer letters got a different reply."

Tillie took the letter and read: "Dear Mr. McGillicuddy," said the copy, written in long hand. "You ask me when I'm comin' to your store to buy again. Well, I just dunno. Maybe if you go in business for yourself someplace—just you, I mean—then I'll come in and buy somethin'. Or, if you could lock that partner of yours up in a back room where I wouldn't have to see him when I come in to buy, then maybe I would come.

"He makes me nervous, because he always watches me and my family like he's afraid we're gonna' run off with somethin'. Does he ever smile or be happy about anythin'? Is he married, and if so, how can any woman ever live with a man like that? When a person comes into a store he wants to feel like the storekeeper in his friend.

"You wanted to know why I don't come in and buy anymore. Well, I told you. What are you gonna do about it?" The letter was signed by Pete Smolzik who lived on Rt. 1.

"Oh, my, oh my," said Tillie nervously. "This is awful, perfectly awful."

"But it's true," Pat said. "I'm always trying to tell Oscar to smile more and be more friendly with customers. I recognize his praiseworthy cost cutting policies. I owe a lot to that. But Oscar tears down more than he builds up sometimes."

"You—you're not going to show him this letter, are you?" Tillie said nervously. "You're going to tear it up, aren't you?"

"I am not, begorra," Pat said with fervor. "I'm going to clip off the address at the top and the name at the bottom, so Oscar won't make it miserable for Pete, but I'm going to place that letter on his desk, so he can see it when he comes back from lunch."

"Oh, I'm going out to lunch ten minutes before Oscar gets back," Tillie said worriedly.

"I was kinda figuring on leaving myself about that time," Pat said. "I would think Oscar would want to be alone when he reads the letter. I won't even mind if the partnership has to pay for some broken windows or smashed display tables. This had to come sooner or later from a customer, and maybe this is the best way. But I do think that I will try to dictate those customer letters during Oscar's lunch hour after this, Tillie. Oscar wouldn't appreciate hearing anymore on that subject for awhile."

"Oh, that's good," Tillie said. "I was getting awfully nervous seeing Oscar glare at both of us all the time when you were dictating."

"You'd better put on your hat and coat and go now," Pat grinned. "Knowing Oscar, I can predict he'll be back in exactly 4½ minutes from now. My own hat and coat are ready for a quick exit, too."

Southwest Moisture Situation Looks Dismal

LAS CRUCES, N.M.—The official snow survey shows a poor water outlook for most of the New Mexico river basins. All but the Pecos will have much less water than is needed for next summer's crops.

The survey, which is made by the U.S. Weather Bureau, Soil Conservation Service and Colorado A&M College, indicates the runoff water from melting snows will be less than usual. The snow in the high mountains ranges from 60 to 100 per cent of normal.

The Rio Grande Valley is in for another waterless year unless heavy snows fall before winter is over. Last year most farmers received only six acre inches for the entire season. This is only one sixth as much as they could actually use. Many of them drilled wells to supplement the river water.

Pecos River farmers are more hopeful. Summer and fall rains filled most of the reservoirs, and most farmers can get all the water needed despite a light runoff from the mountains.

WATER SHORTAGE

FORT COLLINS, COLO.—A Critical shortage of water stored in Colorado reservoirs highlighted the first snow survey report of the 1955 season. This condition, coupled with snowcover that averages below normal, points up the prediction of less-than-normal streamflow from Colorado mountains during the 1955 snowmelt season.

Test Your FERTILIZER I. Q.

By DR. MALCOLM H. McVICKAR
Chief Agronomist, National Fertilizer Assn.

Q. What's the difference between phosphorus and phosphoric acid and potassium and potash?

A. The fertilizer industry uses the terms phosphoric acid and potash. Phosphoric acid, often referred to as P_2O_5, means a combination of two atoms of phosphorus combined with 5 atoms of oxygen. Potash, chemically designated as K_2O, means a combination of 2 atoms of potassium combined with 1 atom of oxygen.

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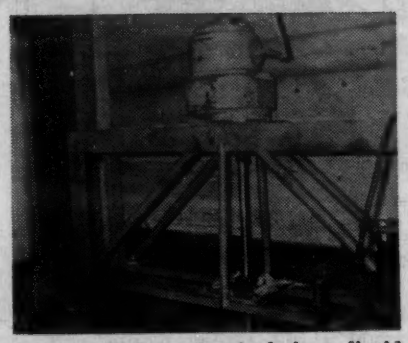

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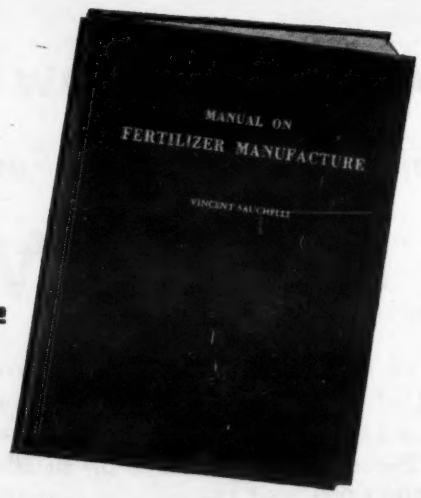

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on rotational circulation up to date on industry happenings.

Pesticide industry leaders, in answer to a Croplife survey, said that an improved balance between supply and demand of materials appeared likely for 1955. . . . Freeport Sulphur Co. and Pittsburgh Consolidation Coal Co. announced plans to form a new firm, National Potash Co.

Commercial Solvents Corp. announced that it will participate in a Canadian chemical project, Northwest Nitro-Chemicals, Ltd., which will manufacture and market nitrogen and phosphate fertilizers. . . . Standard Oil Company of California announced a chemical manufacturing expansion expected to cost $16 million. It will include a new ammonia and nitric acid plant.

A new firm, Diamond Black Leaf Co., was announced Feb. 24. Diamond Alkali Co., Cleveland, will acquire Virginia-Carolina Chemical Company's interest in the new firm during the next five years, according to the agreement. The new firm will be managed by Diamond Alkali. Loren P. Scoville and Dr. Bruce G. Gleissner will serve as general manager and assistant general manager, respectively, in the new firm.

A new attendance record of over 500 was noted at the Feb. 17-18 meeting of the Middle West Soil Improvement Committee in Chicago. Speakers represented colleges and universities in the 13 states involved, and included industry representatives.

The U.S. Commerce Department predicted record sales of chemicals and allied products in 1955, with gains seen in the use of fertilizers and pesticides.

Construction started on an ammonium nitrate plant to be operated by Brea Chemicals, Inc., Los Angeles. . . . International Minerals & Chemical Corp. announced that it is expanding its potassium sulfate producing facilities at Carlsbad, N.M. . . . Stauffer Chemical Co. completed a new insecticide and fungicide blending plant at Lubbock, Texas.

Procedural regulations for the establishment of safe tolerances for pesticide chemicals used on food crops are to go into effect March 6, the U.S. Department of Health, Education and Welfare announced Feb. 9.

Robert Campbell, acting president of the new St. Paul Ammonia Products Co., announced that the firm would erect a $15 million anhydrous ammonia plant near St. Paul.

Fertilizer mixers, replying to a Croplife survey on the 1955 business outlook, said a balance of supply and demand appears likely this year. The fall fertilization program was reported to be making headway in some areas.

The 1955 corn allotment was set at 49,842,697 acres, an increase of 8% over that of last year . . . Organization of Calumet Nitrogen Products Co., a new firm that will build an ammonia plant at Hammond, Ind., was announced by Standard Oil Co. (Indiana) and Sinclair Refining Co.

Sales of East German potash below domestic prices threaten to produce a loss of at least $2.5 million to the U.S. potash industry, it was stated at a U.S. Tariff Commission hearing on the imports. . . . The U.S. Department of Agriculture reported that a serious corn borer infestation is likely this year in the Midwest if weather conditions are favorable for the insect's development.

International Minerals & Chemical Corp., Chicago, announced plans for a more than $1 million expansion program for its potash plant at Carlsbad, N.M.

Regulations governing certification by the U.S. Department of Agriculture of the usefulness of pesticide chemicals as authorized under the Miller Bill were issued by USDA.

The carry-over of 26 major pesticidal chemicals in the hands of manufacturers is down about 10%, according to a USDA report issued Jan. 13. . . . A huge spraying project to control spruce budworm in eastern Canada in 1955 was announced. Some 2 million acres of timberland are due for treatment. A similar project in the western states of the U.S. was foreseen for 1955 with some 900,000 acres slated for spraying by plane against spruce budworm.

Oregon's spray and dust applicators met at Corvallis and heard talks warning against carelessness in disposing of empty containers and in handling chemicals. . . . Richard P. Porter, formerly of Ethyl Corp., was named vice president of Larvacide Products, Inc., New York.

Numerous state meetings were held. Cotton States Branch of Entomological Society of America met at Tampa, Fla. and elected H. C. Young, USDA as chairman. . . . The Southern Weed Conference met Jan. 17-19 at St. Petersburg, Fla. with 300 in attendance. G. C. Klingman, N. Carolina State College, Raleigh, was named president of the Conference.

Colorado Fertilizer Conference was held on the campus of Colorado A & M, Ft. Collins. That fertilizer can largely compensate for lack of moisture in dry years, was emphasized by speakers. . . . Mississippi Insect Conference at State College was held early in January featured well-known speakers.

Croplife's issue of Jan. 17 carried stories about new plants in the east and midwest. Northern Chemical Industries completed plans for a $9 million anhydrous ammonia plant at Searsport, Maine; and U.S. Industrial Chemical Co. announced plans to dedicate its new $7 million plant at Tuscola, Ill. on Jan. 21.

More than 500 attended the Northeastern Weed Control Conference in New York. John Van Geluwe, GLF Soil-Building Service, Ithaca, N.Y., was named president of the group for 1955. . . . The pesticide trade may benefit from new emphasis on grain sanitation, John Cipperly, Croplife's Washington reporter said. Use of the provisions of the Miller Bill will help in this regard, since residual tolerances may now be set.

NAC SPRING MEETING

(Continued from page 1)

lic, and that includes the farmer," Mr. Allen said that many farm people have no idea of the profit they could make by proper use of pesticides. Other aspects of the educational job at this level, he said, include giving the consumer the know-how to use the products and giving him the knowledge of safety limits if the material is hazardous.

Mr. Allen complimented the association for helping to make available the public health release entitled, "Clinical Memoranda on Economic Poisons." He reminded the members of their continuing obligation to safeguard public interests in the use of pesticides, and said such a program would pay off in fewer product liability claims and lower insurance costs.

More Statistics Needed

In the area of self-education of the industry Mr. Allen called for the collection and distribution of more statistics.

"Manufacturers who are considering whether to enter or to leave the production of some items have, at present, no way to determine whether existing plant capacity is adequate with respect to possible markets," he said.

What is needed are (1) an over-all figure of production capacity, (2) up-to-date, periodical production figures and (3) reports of inventories at various levels, Mr. Allen said. The latter figure should include inventories of unformulated materials in manufacturers' hands, inventories of formulated materials by classes in manufacturers' hands and inventories of formulated materials in distribution channels.

Dealer-distributor educational activity should include a new look at credit policies, the NAC president said.

"There are times when I wonder whether we are chemical manufacturers or bankers," he said.

"I think it is time we took a long new look at the policies of unlimited price protection, the length of terms for payment which we offer to the outlets for our chemicals and the whole practice of consignment selling.

"I raise these as questions, but I do not propose answers for them. I will say that I know a number of banks that would be very happy to be invited to take on some of the financing of certain agricultural chemical programs.

"I am not suggesting we stiff-arm our distributors or dealers. For some, it may be more helpful than they recognize, at first, to re-examine their own policies of accepting or requesting credit. Their interests must be considered along with ours, as we take a fresh view of our credit policies."

Mr. Allen also discussed some of the problems of the high cost of research. He said that the cost of establishing residue tolerances, required under the Miller Bill, for some of the older items with low sales volume and low profit, may cause some firms to drop such products from their lines.

Mr. Gillis, in his talk entitled "Disorder out of Chaos," compared some of the present industry problems to those which were experienced, and licked, by such industries as plastics and pharmaceuticals in their formative years.

He said that the real issue is this: "Long term, in this business as in all others, the existence of each of us depends on our performing a necessary function and getting paid for it. How much any of us is paid depends on how much the function he performs is worth to the ultimate consumer.

"For example, take the sales and distribution function. All of us are in business and we know that marketing costs are just as concrete as are manufacturing or research or any other cost. The formulator or distributor or retailer who performs these functions is entitled to recover these costs and to enjoy a reasonable profit on the capital and effort he has invested.

"But our industry hasn't been working that way. We think nothing of short-circuiting the merchandising function—and frequently short-changing ourselves in the process."

The ultimate test of past selling policies is whether or not the farmer benefited, and, in the long term, he has not, Mr. Gillis said.

He listed three adverse effects of weak sales policies:

(1) The farmer hasn't always had the service that he could expect if the suppliers were operating on a sound basis. He has often found local inventories depleted when infestation strikes his neighborhood.

(2) When a supplier doesn't make a profit he becomes unwilling to devote the time and effort necessary to expand application research and bring out new products, a situation that could be disastrous to the farmer.

(3) "The manufacturer, the formulator, the distributor and the retailer of the abused products all have reduced their educational efforts."

Mr. Gillis emphasized that fair profits all down the line from basic manufacturer to dealer are necessary to promote sound, stable industry growth.

"Probably the first commandment, then, should be 'Thou shalt make a profit'," he said.

"The second commandment is like unto it: 'Thou shalt study thy costs so thou wilt know a profit when thou seest one.' Consignments cost money and 'deals' dip into the till. Good cost accounting may be more effective than a good conscience in keeping us on the narrow paths of sound business practice.

"Third, 'Thou shalt not covet thy neighbor's profit.' Sure, go after your competitor hammer and tongs. But let your suppliers and your distributors and your customers make their profit, too."

Mr. Gillis briefly described Monsanto's agricultural research program, as illustrative of what is going on in most large firms. He said that the 1955 agricultural research budget is six times as large as in 1951.

Grain Sanitation

Prof. Wilbur gave a summary of problems and progress in the field of sanitation of grain in storage, basing much of his report on detailed studies made in Kansas which have application in other states.

He reminded the audience that wheat sanitation is a 75 year old problem in Kansas. Progress in the state has been "more than a beginning," and in the state the sanitation measures more than pay for themselves in grain saved, he said.

Mr. Wilbur cited three principal problems of grain sanitation facing the farmers and country elevator operators. They are (1) lack of proper storage facilities on the farm, (2) changes in the species and numbers of insects from year to year and (3) effects of climate.

He discussed use of residual sprays, protectants and fumigants.

Kansas county agents have reported that 43,700 state farmers bin sprayed with residual sprays in 1954, compared to 21,000 in 1949.

If five times as much residual spray as at present was used on Kansas granaries, the job would not be over-done, and it would pay off for the farmer, Mr. Wilbur said.

He reported 14,000 Kansas farmers used protectants in 1954, according to a county agent survey.

He said that the Dept. of Entomology at Kansas State College "has demonstrated to our full satisfaction that the protectant method of wheat treatment at the bin level is practical and effective."

According to the county agent survey, 20,000 Kansas farmers used fumigants in 1951, and 33,000 in 1955. Mr. Wilbur said that there is a tendency for fumigant manufacturers to recommend dosages too low for best results on the farm.

In discussing "Farm Chemicals—The Farmers' Viewpoint," Mr. Heinkel pointed out that the big increase in farm production costs in the past several decades makes the loss of part of a crop a much more serious item than it formerly was. Losing part of a field to insects didn't hurt much in the days when the farmer had little capital invested in his production.

The changes in the economic status of the farmer, who now needs a large outlay of capital to do an efficient job, mean that he cannot withstand financial setbacks as well as at the turn of the century or even in the World War I era, Mr. Heinkel said.

He said that the price of farm products had gone down 25% since 1951, and that many farmers have left the farm and many others are going broke.

"I don't know how much longer the farm depression can go on without bringing the whole economy down into an abyss, such as happened in the 1930's," he said.

As a remedy for declining farm prices he proposed a federal food stamp plan that would distribute perishable farm surpluses to low income groups and institutions at a cost of about $2 billion a year.

Mr. Heinkel said that under his plan, similar to one which worked well in certain cities during the 1930's, the federal government would issue food stamps to low income groups such as old age pensioners and the unemployed, as well as to school lunch supervisors and eleemosynary institutions. The food stamps would be used to buy at retail stores those food products which the secretary of agriculture determined to be in surplus.

"If this simple thing were done," Mr. Heinkel said, "the very people who most need nutritious food would be enabled to obtain and consume it. Our relatively small surpluses of dairy products, meats, poultry and eggs would vanish within a short time, with the result that farmers would soon be receiving near-parity prices in the market place."

Mr. Heinkel pointed out that his plan would only indirectly affect the wheat and cotton surpluses, and was not intended as a cure for the entire farm problem.

In his anual report to the association, Mr. Hitchner noted that the association is cooperating with numerous other groups and agencies, numbering 35 in all, seeking to expand the use of pesticides in agriculture.

He reported cooperation with the Department of Agriculture in securing a survey on stocks, but urged industry members to cooperate to an even greater extent next year.

He summed up association activity and progress on many fronts.

In his banquet talk, which had the theme of stable, prosperous and free agriculture, Mr. Morse tossed out a $13 billion challenge to the farm chemical industry.

Total annual pest losses to crops, pastures, ranges, livestock and products run over that figure, he told the group.

"We look to the chemical industry for the methods and products that will help reduce these huge losses," he said. "It is a $13 billion order."

"More than 60 million acres of crops and land were chemically treated in 1952 for control of insects, diseases, weeds and brush. Even though this no doubt has increased since that study was made, it is clear that only a small part of the total cropland and timber and brush land is being treated. Vastly more disease and pest control is needed."

Mr. Morse listed some of the newer areas of opportunity for the industry. These include, he said, antibiotics for control of bacteria plant disease, systemic chemicals, soil insecticides, control of range and grassland pests with insecticides, fertilizer-pesticide mixtures, chemical protection of crops when they are stored and moved and chemical control of plant rust.

More Research Urged

He urged increasing research, with particular attention to basic research, noting that had there been no Mendel's law of genetics, there would have been no hybrid corn 60 years later.

"The results of agricultural research dwarf the benefits of most other types of farm programs," he said. "Research and education make farm bank accounts grow with better production and farming methods—and more effective selling and marketing."

Mr. Morse was optimistic about the immediate and long-term outlook for agriculture.

"The transition to a peacetime economy has been largely accomplished," he said. "We do not expect the cost-price squeeze on farmers to tighten further."

In saluting the farm chemical industry for its contributions to better agriculture, Mr. Morse said that "constructive selling by industry has been a powerful educational and extension force. It is a major reason why agricultural chemicals are being used increasingly."

However, he said, there should be continuing emphasis on factual information—on how to use and how not to use to get best results.

"There is too little information on the dollars and cents value for the farmers who want to step up their profits," he said.

CONVENTION COVERAGE

★

Coverage of the NAC Spring Convention, appearing in this issue, is by the following Croplife staff members: Lawrence A. Long, Donald Neth and W. E. Lingren, all of Minneapolis, and Martin E. Newell, Kansas City.

POTASH RULING

(Continued from page 1)

not represent fair market value and consequently were in violation of the Anti-Dumping Act of 1921. It asked the Tariff Commission to hold hearings and take testimony on these reported conditions and report to the Treasury Dept.

In the instance of the East German muriate of potash imports in a split decision, the Tariff Commission found no violation of the act. In the case of potash from western Germany and France it made the same findings, this time, however, by a unanimous vote.

The latest opinion of the commission would appear to close this issue for some time. However, it is probable that both issues will be kept under review to measure the volume of imports from all these sources and to maintain a price check.

WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Britain has had its wettest year in half a century. All the rain, experts believe, must have leached more of the plant nutrients from the soil than usual, and the opinion in farming circles is that fertilizers will have to be applied generously this spring.

In some places the basic need is lime, and where a soil test shows that the lime status is low for the crops that are sensitive to soil acidity, such as barley, wheat and the clovers, application can be made right now. There is still considerable lime deficiency in Britain as a whole and though last year nearly 5 million tons were used, applications were smaller than in previous years. This deficit must now be made up.

Nitrogen is the plant food most likely to be lacking this spring; potash and phosphates in the soil are not so soluble. Each farmer has his own idea of the amount of fertilizer it pays to apply to particular crops, and generalizations on the optimum use of fertilizers can be misleading. Recent calculations by British farmers suggest that farmers could use more nitrogen. Already they are using more potash than five years ago, and the use of phosphates is well established, though not always at a high enough level.

Mexican Sulfur

The first shipment of sulfur to the U.S. from Mexico was made towards the end of February, according to trade sources. This is looked upon as a significant development in the Mexican economy. During March shipments will be made to Western Germany and to other foreign markets.

The Mexican sulfur company concerned in the new source of supply has a plant at the port of Coatzacoalcos, built at a cost of more than $6 million.

Canada's Problem

Traders report that the outlook for fertilizer sales in the prairie provinces of Canada is poorer than it has been in late years. Contributing to the expected slowdown in business is the reduction in revenue experienced by farmers; the poor crops harvested in 1954 were responsible for this. Sales, therefore, are in for a curtailment. On the other hand, Canada is now exporting nearly 50% of its fertilizer production and there is no expectation of any slowdown in this business. Apart from the prairie provinces, the demand in other parts of Canada, particularly Ontario and British Columbia is expected to remain at former levels.

The outlook for the pesticide, herbicide and fungicide industries is better provided the farmers can be educated to the advantages accruing to them from a far wider use of the materials now available. The Du Pont Co., of Canada, Ltd., estimates that out of the more than 47 million acres seeded to cereal crops in Canada only 19 million were treated last year for diseases and wireworms, and less than 12 million were chemically treated for weeds.

Du Pont also reports that on the 623,091 farms in Canada only about one half of 1% of the average farmer's income was spent on profit boosting pesticides in 1954.

Russia as Supplier

The possibility that Russia might emerge as a major supplier to the world's fertilizer using countries has been debated in trade circles on several occasions. One sale has already been reported, though it is possible that shipments have previously gone to countries under Communist influence in Europe. The present report, however, concerns a deal for 50,000 tons of chemical fertilizers shipped to North Korea.

Fertilizer from Oil

A Dutch firm claims to be the first firm in the world to make fertilizers from crude oil. Responsible for this project is Mij. t. Expl. v. Kooksovengassen Mekog, one of Holland's leading manufacturers.

A new plant is to be built at Ijmuiden-Velsen to produce nitrogen from crude oil, a raw material cheaper than coal, according to Mekog. Plans call for a hike in the total fertilizer output from 370,000 tons to 500,000 tons a year over the next few years.

Israel Investment

A trade source in Tel Aviv states that an additional investment of an amount equal to $6,440,000 will be required for the modernization and expansion of the Israeli potash works at Sodom, located at the southern end of the Dead Sea. The expectation is that the project will be completed by the middle of 1956 and then output will considerably exceed that of the two plants in operation before the outbreak of the Arab-Israel war in 1948. The plant at the northern end of the Dead Sea, now in Jordan territory, was put out of action at that time.

The same source states that the output of phosphate from the Negev desert, in the southern part of the country has increased from the 16,000 tons extracted in 1952-53 to 60,000 tons in 1954. A further increase to 140,000 tons is projected for 1955.

Monsanto Plans

Monsanto Chemicals, Ltd., the British firm, is forming a new wholly owned subsidiary, Monsanto Phosphates, which will erect and operate plants in the U.K. for the production of sodium phosphates and other phosphorous compounds.

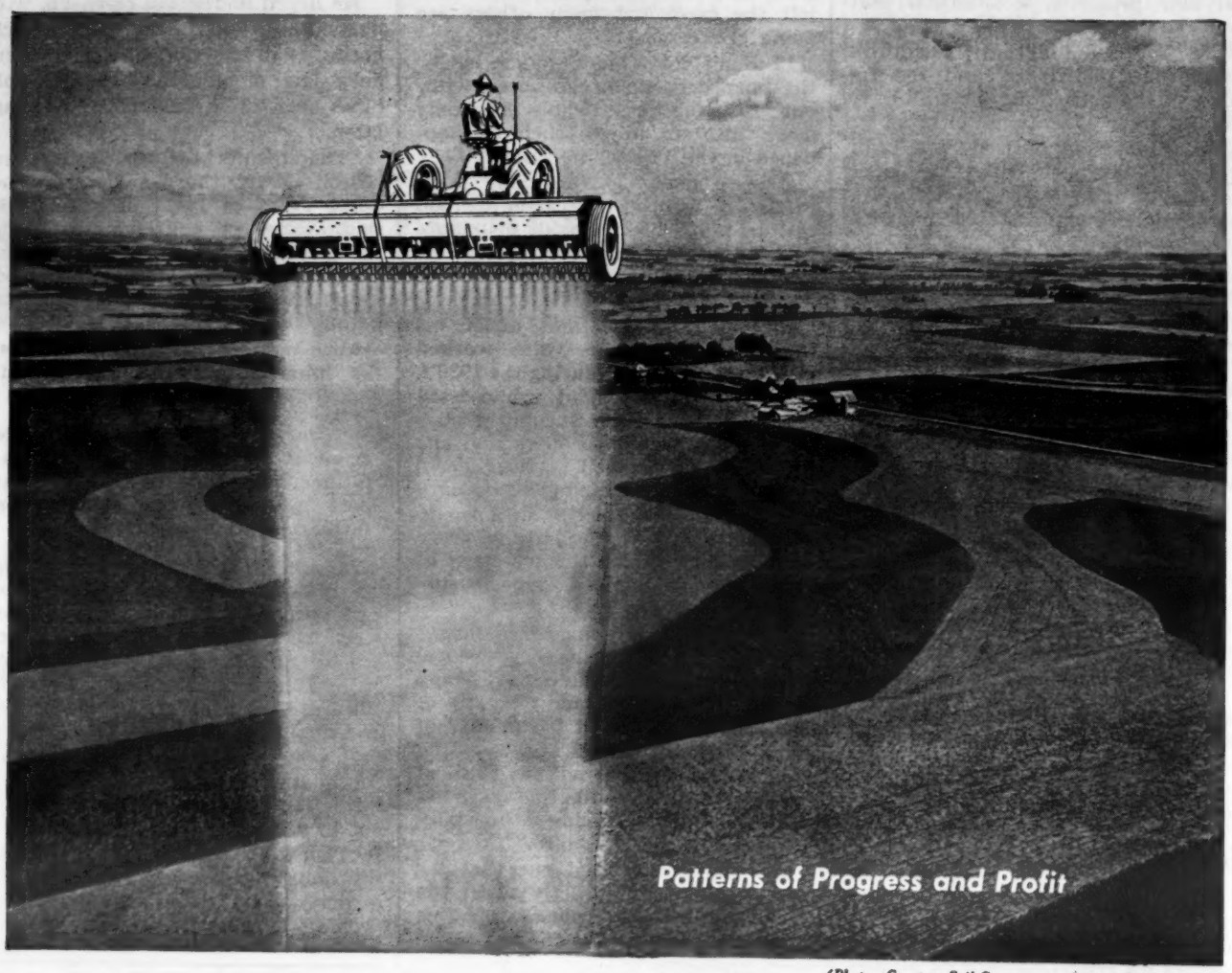
This latest Monsanto project will be backed by the know how of its American associate, the Monsanto Chemical Co. Monsanto Phosphates will also administer the present interest of Monsanto Chemicals in the Tororo Exploration Co., which is developing phosphate deposits in Uganda, Africa.

New Mexico Hopper Control to Center on 300,000-Acre Area

STATE COLLEGE, N.M. — Grasshopper control measures will be concentrated in a 300,000-acre area west of Lovington, N.M., this year, agricultural leaders here have announced.

Another section where the grasshoppers are threatening is the area north of Nara Visa, N.M. This area has both range and farm land. A heavy population is expected if the rains come.

Little control work is planned, however, in a third area—the San Augustine plains west of Magdalena, N.M.



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Effectiveness of Soil Practices Noted in North Dakota Study

FARGO—The effectiveness of certain cropping and soil treatment practices that have been under study in the long-time fertility experiments by the North Dakota Agricultural College Experiment Station are reported in the station's annual report for 1954, which was released recently.

The article is based on investigations conducted by R. A. Young, J. C. Zubriski, E. B. Norum, C. M. Swallers and T. E. Stoa, all from the college's Agronomy Dept. Their studies included chemical analyses of the soil from the test plots and measurements of the response to crops in 1954 to new fertilizer treatments, including nitrogen and phosphorus alone and in combination.

The following summary of these studies is from the annual report of the station.

Chemical analyses showed that during 40 years of cropping, there had been a loss of about 27% of the organic matter and over half of the available phosphorus in soils that had received neither crop residues nor manure.

Where either crop residues or manure had been returned, the losses in organic matter were about 20% and the losses in available phosphorus about 40% and 28% respectively.

Where phosphorus fertilizer had been added at a rate of 60 lb. P_2O_5 per acre each four years, together with crop residues or manure, organic matter was found to be about 22% lower and available phosphorus from 20% to 50% higher than it was 40 years earlier.

Fertilizer treatment results in 1954 indicate that previous applications of 60 lb. P_2O_5 per acre have maintained or built an adequate or near adequate level of available phosphorus, but neither manure nor crop residues has maintained either phosphorus or nitrogen at a level high enough for maximum production of small grains or corn.

On long-time non-phosphated treatments, they found that nitrogen alone did not appreciably increase the yield of wheat following corn, probably because of the shortage of phosphorus, but where phosphorus had been applied throughout the years, or where it was applied this year, substantial yield increases were obtained from nitrogen applied to the 1954 wheat crop at a rate of 40 lb. per acre.

In a trial at the Edgeley Branch Station, Mr. Zubriski, Mr. Norum and Miles White found that plow-ponypress drill preparation of stubble land in the spring resulted in a better yield of wheat than other methods of seedbed preparation, followed in decreasing order by plowing, subsurface tillage plus two tons of straw, disking, duck-footing, subsurface tillage and burning.

Nitrogen at 20 lb. per acre superimposed on the above treatments increased the yield an average of 3 bu. per acre whereas 40 lb. nitrogen per acre increased the yield an average of 6 bu. per acre over an average base yield of 16.7 bu. per acre. Where nitrogen was applied at a rate of 40 lb. per acre most methods of seedbed preparation tested gave about the same yield.

At the Langdon Branch Station, where fall preparation is the practice and the plow, deep tillage plus plow, one-way and mold-boardless plow methods were compared, the various tillage methods did not vary appreciably in their effect on yield of wheat.

Phosphate alone superimposed on these treatments increased the yield of wheat slightly over 8 bu. per acre over a base yield of 33.1 bu. Further addition of nitrogen at 20 and 40 lb. per acre had little or no additional effect. (This is in contrast to the usual results at Langdon where nitrogen-phosphate applications have been superior to phosphate alone.)

The method of tilling land for fallow did not result in any difference in yield of wheat which followed. Supplementary application of phosphate fertilizer to these fallow plots, however, resulted in an increase of about 7 bu. per acre over the non-phosphated plot.

In trials conducted at Edgeley, Hettinger, Dickinson, Williston, Minot and Langdon branch stations, Mr. Zubriski, Mr. Norum and the branch station personnel found that where wheat was grown either on non-fallow land fertilized with a nitrogen-phosphate fertilizer, or on fallow land fertilized with a phosphate fertilizer, the soil profile contained about the same amount of water at harvest time as where wheat was grown on corresponding plots receiving no fertilizer.

Fertilizers did, however, advance the maturity of the wheat which resulted in correspondingly earlier withdrawals of soil moisture. At all locations fertilizers increased the yield of wheat, these increases ranging from 0.9 to 9.6 bu. per acre. This increased production on the same amount of soil moisture indicates that wheat grown on fertile soils utilizes soil moisture more efficiently.

In seven fertilizer trials with corn conducted in the six southeastern North Dakota counties Armand Bauer, Mr. Zubriski, Mr. Norum and Mr. Young found that where soil moisture conditions were fairly favorable during critical periods, profitable increases in yield were obtained from planter attachment application of phosphorus alone, and nitrogen phosphorus fertilizer at rates furnishing 10 lb. nitrogen per acre and up to 40 lb. phosphorus per acre. Still larger increases in yield were obtained in a number of cases from additional nitrogen and phosphorus applied broadcast and either plowed down or worked into the soil in seedbed preparation.

Spencer Chemical Cited For Public Relations

PITTSBURG, KANSAS — The Spencer Chemical Co. here, with six other Kansas firms and organizations, has been singled out for outstanding public relations programs. The awards were announced Feb. 26 by the Public Relations Directors Institute at the University of Kansas, Lawrence. The Spencer Chemical Co. won the award for its program of naming a distinguished farm banker in Kansas.

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NAC HERBICIDE PANEL — Shown above are members of a NAC Spring Convention panel who discussed the subject, "Farm Chemicals Workshop — Better Farming with Herbicides." From left to right, they are Dr. Robert D. Sweet, Cornell University; Dr. Marion W. Parker, U. S. Department of Agriculture, Washington; Jack Dreessen, NAC herbicide specialist and panel moderator; Dr. Arne E. Carlson, E. I. duPont de Nemours & Co., Wilmington; Dr. Lloyd V. Sherwood, Monsanto Chemical Co., St. Louis, and Hillard L. Smith, Dow Chemical Co., Midland, Mich.

Continued Growth in Use of Herbicides Seen by NAC Panel

ST. LOUIS—The use of herbicides in agriculture is due for a considerable increase during the coming years, it was emphasized by a panel of specialists representing the industry, colleges and the government at the National Agricultural Chemicals Assn. meeting here March 8. Jack Dreessen, herbicide specialist for the association was moderator of the panel.

Participating in the discussion were Dr. Marion W. Parker, Weed Investigation Section, U.S. Department of Agriculture, Beltsville, Md.; Dr. Robert D. Sweet, Department of Vegetable Crops, Cornell University, Ithaca, N.Y.; Dr. Lloyd V. Sherwood, manager of the agricultural chemicals section of Monsanto Chemical Co.'s Organic Chemicals Development Dept.; Dr. Arne E. Carlson, manager of agricultural chemical sales for the Grasselli Chemicals Dept. of E. I. duPont de Nemours & Co., Wilmington, Del. and Hillard L. Smith, product manager of herbicide sales for the Dow Chemical Co., Midland, Mich.

In his part of the program, Dr. Parker predicted an increased use of herbicides as a key to increased production of foodstuff with available land and farm labor. He told of research activities now being carried out by the U.S. Department of Agriculture and predicted that this research, plus that being done simultaneously by industry, will result in better weed control throughout American agriculture in a few years.

Mr. Smith reviewed a number of herbicides and predicted an increase in the use of dinitro materials, particularly in the field of pre-harvest sprays on legumes grown as seed crops and as post and pre-emergence weed control sprays in several crops.

He declared that the herbicides 2,4-D and 2,4,5-T have not yet reached their peak use and foresaw widespread use of the new propionics including silvex and dalapon for control of weeds, woody plants and grass.

Dr. Carlson stated that his company's main contributions to the herbicide field have been substituted urea products and ammonium sulfamate. He pointed in particular to the further mechanization of cotton that will be possible with the increased use of herbicides and economies to be expected by power companies as they expand programs of chemical control on their rights-of-way with herbicides.

Dr. Sherwood pointed to chloro-IPC as a herbicide with an unsaturated market potential. It is a pre-emergence herbicide that offers good control of weeds in cotton, alfalfa, clovers and other crops, he said. Dr. Sherwood also reported much promise for grass control in broad leaf crops from two new classes of herbicides recently reported by Monsanto, d-chloro-N,N-diallylacetamide (CDAA) and d-chloro N,N-diethylacetamide (CDEA) representing one class, and 2-chloroallyldiethyldithiocarbamate (CDEC) representing the other.

Dr. Sweet pointed out the tremendous potential for herbicidal use in vegetable crops, declaring that during the past few years, the use of chemical weed killers has been accepted more by growers of horticultural crops than by those of agronomic crops.

"After five years, only about 1½% of the total acreage of cotton has been treated with herbicides," he said, but in vegetable crops, the increase has been as much as 90% within a year.

Specifically, he indicated that between 80% and 90% of onion acreages have come under chemical treatment for weed control in two years and that in the case of asparagus, some 75% of the total acreage has been treated in three years.

"Here is the market for herbicides," he told the group. "Just explain what herbicides will do in labor-saving in vegetable crops, and the selling problem is solved," he said.

Horticultural crops, he said, are worth five to ten times the value of agronomic crops, and in the case of hoeing by hand vs. chemical spraying to control weeds, the advantage is at least ten-fold on the side of chemicals. Dr. Sweet concluded his talk by urging the industry to look to the vegetable crops for greater volume and solid sales.

Fred W. Hatch, Shell Chemical Corp., New York, NAC vice president, presided at the session at which the panel was held.

Hypro Engineering Moves to New Building

MINNEAPOLIS—Hypro Engineering, Inc., manufacturer of roller and rubber impeller pumps in Minneapolis, has moved its offices and assembly area into new quarters at 700 39th Ave. N.E. The firm was formerly located at 404 N. Washington Ave.

The new building is constructed of masonry and faced in brick, occupies 10,000 sq. ft. and provides space for private offices, a general office, engineering department and shop and engineering sections. Hypro Engineering designs and produces pumps which handle a variety of liquids from water to spray materials for farm, home and industrial use.

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NAC SOIL INSECTICIDE PANEL—Shown above are panel members who discussed the subject, "Farm Chemicals Workshop—Better Farming with Soil Insecticides," at the NAC Spring Meeting. From left to right, they are Dr. John H. Lilly, Iowa State College; Fred C. Hatch, Shell Chemical Corp., Denver, NAC vice president who was in charge of the session which included the panel; Dr. George W. Decker, University of Illinois, panel moderator; Dr. Charles C. Compton, Shell Chemical Corp., Denver, and Dr. O. N. Allen, University of Wisconsin.

NAC Panel Sees Bright Outlook Ahead for Soil Insecticides

ST. LOUIS—A thorough discussion of soil insecticides was featured on the March 8 program of the National Agricultural Chemicals Assn. here, when a four-man panel of experts presented "Farm Chemicals Workshops — Better Farming with Soil Insecticides." Moderator of the panel was Dr. George W. Decker, Illinois Natural History Survey entomologist, Urbana, Ill.

The other three panel members were Dr. John H. Lilly, professor of entomology, Iowa State College, Ames; Dr. Charles C. Compton, acting manager of product and sales development, Agricultural Chemicals Division, Shell Chemical Corp., Denver, and Dr. O. N. Allen, professor of bacteriology, University of Wisconsin, Madison.

All speakers indicated that the use of soil insecticides is an increasingly important phase of agricultural pest control and that techniques are being developed to make practical the application of insecticides with fertilizers.

Dr. Decker, in his introduction, said that every farmer in the world is competing with insects, but the average farmer probably has no idea what a big share of his work the insects destroy.

"The least understood and most insidious of these pests, live below the surface and attack the roots of plants," he said. "Average crop yields can be increased at least 10% by the elimination of these soil-inhabiting pests."

Control of many soil-inhabiting insects has been successfully demonstrated, Dr. Decker observed, but he added that "we have only written the introduction to what should be one of the largest and best chapters in the history of economic entomology."

Dr. Lilly reported that in Iowa, a number of insecticides have been tested and proved for the control of corn rootworm. These materials include aldrin, heptachlor, dieldrin, BHC, endrin, chlordane and lindane, he said, and added that insecticide-fertilizer mixtures used as starter fertilizers have proved popular because of the low dosages used and because no extra work is required to apply. "Spray applications made with ordinary farm sprayers appeal to farmers and some early tests indicate they may give control for two years," the Iowa entomologist said.

Use of soil insecticides in Iowa have increased to unprecedented heights, he reported. In 1951, a total of ten acres was treated by insecticide-fertilizer mixtures. This jumped to 15,000 acres the next year; 200,000 acres by 1953 and in 1954, the total reached to 362,500 acres. Other methods of applying soil insecticides were of the same magnitude, with the total acres treated rising from 25 in 1951 to 600,000 in 1954.

The figures for 1954, he explained, are further significant since they are in addition to the acreage planted with insecticide-treated seed.

"In my opinion, the use of soil insecticides is still in its infancy," he said. "Just how far they will go is anyone's guess."

"Crop-destroying insects that spend very little time in the soil can still be destroyed by insecticides applied directly to the soil instead of to the plants," Dr. Compton stated in his talk. "The result is better protection of many kinds of crops," he said.

Initial studies with the insecticides (in conventional formulations) indicate that wettable powders, dusts, emulsible concentrates and, in a few instances, oil solutions, gave good control of insects if the products are properly applied, he indicated. Mixing the insecticide with fertilizer has proved one of the most economical and popular ways of doing the job.

The development of the new chemical products has been accompanied by a rapid development of new equipment for applying the insecticides. Among the new items are: a device attached to seeders that drill granules into the soil along with the seeds, spraying equipment applying in bands along rows at the time of seeding, distributing equipment for ground application of granular formulations and the use of airplanes in distributing both liquid and granular formulations on a broadcast basis, it was pointed out.

The importance gained since World War II by various insecticides for their "high degree of efficiency in controlling soil insect populations" was cited by Dr. Allen.

Studies in progress on Wisconsin soils, he reported, show that the vitally important populations of microorganisms in the soil are not affected by normal applications of certain insecticides.

He stressed the relationship between the new agricultural chemicals and the microbiological aspect of farming because the microorganisms are so important in supporting plant life.

To give farmers continued benefits from recent advances in the development of new insecticides, Dr. Allen suggested a long term program of research on the relation between the chemicals and microflora in the soil. One of the chief needs is for standard test procedures. These should specify experimental layouts, the processing of treated samples for analysis, microbiological indices, and criteria for evaluation. He also proposed cooperative projects between entomologists, soil scientists and microbiologists to obtain maximum profit from long term studies.

HORTICULTURE SHORT COURSE

ST. PAUL—The University of Minnesota's 34th annual horticulture short course will be held on the St. Paul campus March 25-26.

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Consignment Selling Berated

Surprising sidelights are sometimes noted in the replies to questionnaires sent out to the trade. The recent Croplife query which asked pesticide leaders in effect, "How do things look for 1955?" brought not only answers to this question (as noted on page 1, March 7 Croplife) but also some additional comments which we think could well be chewed over further.

The subject of consignment sales of agricultural chemicals was cited by one tradesman as being "one of the industry's greatest problems." His statement will probably strike a responsive note in the minds of many others in the trade who have experienced the ill effects of this practice.

Since it is more or less common knowledge that consignment sales have much to do with what our respondent calls "demoralizing prices and low margins," it seems fair to question why goods are sold on consignment in the first place. Is selling so tough that merchandise must be moved in this way?

Of course it is not difficult to understand the ease with which the pesticide industry can fall into this type of business. By its very nature, the trade is dependent for prosperity upon many factors beyond control. The weather, the degree of insect infestations, the kind of crops being cultivated and rainfall in an area all add to the uncertainty. Then, too, there is always the possibility of a competitive product coming in to displace the ones in stock.

Added up, these factors, plus others, tend to make dealers reluctant to stock up heavily . . . so in order to move goods, shipments on a consignment basis appear to be the easiest way out. So, when temptation wins, business frequently loses.

True, a certain amount of risk is involved in stocking up on insecticidal materials, but it is not the type of gamble that should be fatal if the season is slow.

Insecticidal materials in stock are somewhat comparable to insurance against the likelihood of insect infestations. Yet, when one buys an insurance policy against fire, theft or other contingencies, he hardly expects the agent to give him a policy to be paid for only if some emergency arises. The two situations are quite parallel.

Why, then, should consignment orders be taken? As our questionnaire commentary observes, they "contribute to low margins and to the instability of the industry." And, to quote him further, he charges that it creates the kind of credit, extension of sales and inventories that can only cause difficulty and demoralize prices. It weakens not only the supplying formulator but also the so-called consignment customer who in turn extends his business operation beyond what his capital can sustain.

Everyone knows that pressures are tremendous when it comes to moving insecticides in some parts of the country and it is understandable how one can easily succumb to the easier means of consignment selling.

But it is not the way to build soundly, as many have found through sad experience. The pesticide industry will no doubt prosper more in the long run by passing up consignment business. It may be an untasty pill, but frequently, so are the end results of consigning merchandise.

Solving Industry's Problems

Growth of the chemical industry and its accompanying technology has brought about many desirable results, but has also presented the industry with a special set of problems and responsibilities, William C. Foster, president of the Manufacturing Chemists' Association, Inc., declared in a recent address.

He pointed out that many of the present and future problems of humanity can and probably will be solved through chemical technology. Thus looking ahead, Mr. Foster brings up some of the problems that the industry, including the makers of fertilizers, pesticides and other chemical products for agricultural use, will have to face directly or indirectly.

One of the problems mentioned is that of how the new technology, entering so many phases of every day life, will affect human health. This phase is being studied by groups of competent scientists who hope to find what effect these new substances, after prolonged use, will have on human life.

Another problem, one that has been mentioned here before, is that of finding men and women of sufficient training to manage these new tools of technology. Mr. Foster reminds that the chemical industry has grown fourfold since 1939—by 1975 it may be 400% larger than it is today. "At the same time," he says, "the number of technical graduates available to industry is shrinking, instead of growing. Today less than one-half of the high schools of the U.S. offer adequate preparatory courses for would-be chemists and chemical engineers.

"We must reach the minds of young America and point out to them the challenge and opportunity offered by industry to technically qualified people. We are making efforts in this direction. These efforts must be increasingly effective or we may well find ourselves a 'have-not' nation as far as technical manpower is concerned."

Still another problem is that of fundamental research, he declared. "Research not aimed at a specific goal such as a commercial product—but reseach seeking only to advance the knowledge of science. On this source material is built our applied research and our product and process development. Of necessity, most of the chemical industry's annual research expenditure of approximately $300 million is in applied research.

"Some fundamental research is being done in industrial laboratories. Other industry-endowed basic research is conducted in our colleges and universities. But we are still lagging badly behind other countries. As an example of this, consider that virtually all our atomic developments stem from European roots.

"The answer to this may be closer liaison among industry, science and educators—a better awareness of the over-all problem and a keener realization of each other's requirements. With all three in the same harness, we should be able to get the field plowed—but we had better get started soon."

Fertilizers in 1955

"The year 1954 has been one of adjustment, not only from a war to a peacetime economy, but it has seen a return to a highly competitive situation as well. There is no reason why 1955 and future years should not see an expanding fertilizer industry on a healthier basis. The answer to this desirable situation is in our own hands. We are providing our customers with continually improved materials, thus enabling them to produce more and better food and fiber at very small added cost to them. We should make it generally well known that the price of fertilizer is now only 13% above the figure in 1935 in terms of plant food content, as compared with an increase of 125% in the prices farmers pay for all commodities. This is a record of which we can be proud. However, the industry has a big selling job to do, both collectively and individually."—Sidney H. Bierly, executive secretary, California Fertilizer Assn., in annual report before CFA convention, Coronado, Cal.

CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

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Published by
The Miller Publishing Co.
2501 Wayzata Blvd.
Minneapolis, Minn.
(Address Mail to P.O. Box 67, Minneapolis 1, Minn.)

Associated Publications
THE NORTHWESTERN MILLER
THE AMERICAN BAKER
FEEDSTUFFS
MILLING PRODUCTION

MEETING MEMOS

March 14-15 — National Nitrogen Solutions Assn., First Annual Meeting, Paxton Hotel, Omaha, Wayne R. Johnson, Box 163, Shenandoah, Iowa, president.

March 22-24—National Farm Chemurgic Council, Inc., Annual Conference, Deshler-Hilton Hotel, Columbus, Ohio; John W. Ticknor, NFCC, 350 Fifth Ave., New York, conference chairman.

March 24-25—North Central States Branch, Entomological Society of America, East Lansing, Mich.

Apr. 26 — Third Annual California Fertilizer Conference, sponsored by the Soil Committee, California Fertilizer Assn., University of California, College of Agriculture, Davis, Cal., Sidney H. Bierly, Executive Secretary, CFA, 475 Huntington Drive, San Marino, Cal.

May 19—Fertilizer Section, 25th Annual North Carolina Safety Conference, Robert E. Lee Hotel, Winston Salem, N.C.; William C. Creel, Safety Director, Department of Labor, State of North Carolina, Raleigh, Chairman.

June 2 — South Carolina Fertilizer Meeting, Sandhill Experiment Station, near Columbia, S.C.

June 3—Fertilizer Section, Virginia State Safety Association, Jefferson Hotel, Richmond, Va.; William C. Richardson Southern States Cooperative, Richmond, Chairman.

June 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Association, Greenbrier Hotel, White Sulphur Springs, W.Va. Paul T. Truitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

June 28-30 — Sixth Annual Pacific Northwest Plant Food Assn. Regional Fertilizer Conference, Boise Hotel, Boise, Idaho, Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., secretary.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Sept. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton Council of America, Box 18, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago, Thomas J. Clarke, Chairman.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend Ore., Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco, Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.

All Want Ads cash with order.

SITUATIONS WANTED

FERTILIZER SALES POSITION — HAVE unusually valuable background in fertilizer industry. Presently employed in fertilizer public relations and market research. Want basic experience in fertilizer sales to prepare for future responsible position with growing firm. Personable, young, free to travel Middle Atlantic states. Address 591, Croplife, Minneapolis 1, Minn.

HELP WANTED

TECHNICAL SALES REPRESENTATIVES WANTED

Corona Chemical Division of Pittsburgh Plate Glass Co. has opening in North Central States for representatives with selling experience. Training in Horticulture or associated studies preferred. WRITE MOORESTOWN, NEW JERSEY

Antibiotic Treatments Boost Potato Yields, Scientist Reports

WASHINGTON — A scientist at the University of Maine Agricultural Experiment Station has reported increased yields of up to 72 bu. per acre in potato crops treated with an antibiotic combination to combat soft rot and blackleg disease of that vegetable.

Dr. Reiner Bonde, writing in the current issue of the Plant Disease Reporter, official publication of the U.S. Department of Agriculture, said that Agri-mycin, a combination of terramycin and streptomycin, not only controlled the two bacterial diseases but also produced higher yields per acre in field trials in Maine.

Dr. Bonde reported:

"It can be observed from the data that all of the Agri-mycin treatments increased the yields. This increase in yield rate varied from 19 bu. per acre in the Patten (experiment) area to 69 and 72 bu. per acre in Presque Isle."

Two different methods were used by Dr. Bonde in treating the potato crops to prevent the appearance of the diseases. One lot of seed stock at each cooperating farm was dipped into a solution containing 100 parts of Agri-mycin per million parts of water. A second lot was allowed to soak in the antibiotic solution for 30 minutes. Still a third seed lot at each commercial farm was left untreated as a control.

All yield data was computed by Dr. Bonde at the time of harvest, while a record of the appearance of blackleg and soft rot was maintained throughout the growing season. The Maine scientist said that early in the season there was no indication of the diseases in plots treated with Agri-mycin and that only "trace amounts" appeared later on. He concluded:

"Treating seed pieces in Agri-mycin solution (at 100 parts per million) on commercial farms reduced the amount of seed piece decay (soft rot), generally increased emergence (stand) in the field, greatly reduced the percent of blackleg, generally improved the color, size, and vigor of the plants, and always increased the yield rate. The instant-dip treatment was as effective as the 30-minute treatment in reducing seed piece decay and blackleg."

Agri-mycin is produced by Chas. Pfizer & Co., Inc.

GRASSLAND PROGRAM

MADISON, WIS.—A new Wisconsin Grassland Farming Program has been set up by a grassland committee meeting here during Farm and Home Week, according to Vic Burcalow, forage crop specialist at the University of Wisconsin. The new 1955 program is not competitive, but instead certificates will be awarded to all farmers registering for the program who produce at least 2,500 lb. feed nutrients or 4,000 milk per acre of pasture.

When You Think of CHEMICALS Think of THOMPSON-HAYWARD
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Editorial Excellence...

Croplife is proud of the seasoned and experienced staff of business journalists assembled to plan and direct the publication of each issue of this weekly *news*paper for the agricultural chemical industry.

EDITOR

LAWRENCE A. LONG, top editorial name in the farm chemical industry, is editor of Croplife with 20 years of editorial achievement behind him. He has had seven years of experience as editor of a monthly magazine in the agricultural chemical industry. With a combination of insight into and an understanding of the farm chemical industry and an extensive background of news work, Mr. Long oversees Croplife's widespread reporting job which brings news to the industry while it is still news. His familiarity with the industry also is invaluable in the guiding of Croplife's service program.

Lawrence A. Long

Donald Neth

MANAGING EDITOR

DONALD NETH, managing editor of Croplife, had five years of newspaper experience in the agricultural community before joining the staff of Miller Publishing Co. He has intimate first-hand knowledge of the growing importance of the use of fertilizers and agricultural chemicals in the management of efficient farming operations. For more than a year and a half he was in charge of the extensive research on the agricultural chemical industry undertaken by Croplife in preparation for its launching and he now is responsible for the day-to-day editorial operations of the weekly newspaper.

PLUS FULL-TIME STAFF—Backing up these specialized editors is a staff of newsmen working in Washington, New York, Chicago, Kansas City and Minneapolis, supplemented by 100 correspondents in other key cities. Industry news is gathered, sifted and reported with accuracy bred of an 80-year publishing tradition in the business journal field. A modern network of teletype communication links all Croplife offices permitting last-minute news deadlines. Croplife's own complete mechanical and printing plant completes the broad facilities necessary in the production of the weekly industry *news*paper.

FOREIGN NEWS—George E. Swarbreck, Croplife foreign manager, is alert to overseas news developments of interest to the agricultural chemical industry and supervises this news coverage in addition to writing a weekly column, "World Report."

WASHINGTON NEWS—Through weekly coverage of the nation's capital, Croplife keeps its readers up to date on events in this vital news center. Croplife's Washington correspondent is John Cipperly, a veteran capital newsman who interprets the Washington scene in terms of its short and long range impact on the industry. In looking behind the government news releases and the surface actions of agencies, Croplife reports on trends and significant behind-the-scenes activities.

RETAIL DEALER FEATURES—One of Croplife's principal editorial functions is to gather, sift and publish news and feature articles designed to make better merchants out of retail dealers of farm chemicals. Under the direction of Emmet J. Hoffman, merchandising editor, material specifically slanted toward the dealer is prepared by a staff that knows the dealer's language. Croplife is the first business paper to give this specialized editorial attention to retail dealers of agricultural chemicals.

The point of all this, to an advertiser, is that Croplife offers a unique, timely advertising medium to reach the agricultural chemical industry. A seasoned staff of full-time experienced business journalists, plus the complete facilities of a modern publishing company, insures the production of a top-quality publication devoted to service to the industry *weekly*.

WRITE — WIRE — PHONE our nearest office for a complete analysis of Croplife's important role in your advertising program.

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